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Experimental Gill Net Fishing on Trawlable and Untrawlable Areas off Northwestern Vancouver Island, from the *MV CALEDONIAN* August 15-28, 1989

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by

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ABSTRACT

Matthews, K. R., J. R. Candy, L. J. Richards, and C. M. Hand. 1989. Experimental gill net fishing on trawlable and untrawlable areas off northwestern Vancouver Island, from the MV CALEDONIAN August 15-28, 1989. Can. MS Rep. Fish. Aquat. Sci. 2046: 78 p.

This report summarizes cruise results from a fishing vessel operating off northwestern Vancouver Island between August 15-28, 1989. The purpose of the survey was to describe rockfish communities on hard (untrawlable) bottom and compare them to those found on smooth-bottom (trawlable) areas. In order to fish hard-bottom areas, the MV CALEDONIAN, a chartered commercial trawl vessel, deployed and retrieved sunken gill nets. Fishing was conducted on the continental slope between 200-300 m on two habitat types: hard-bottom habitat considered untrawlable and smooth-bottom habitat typical of trawlable areas used by commercial trawlers. Species composition differed between the two areas. Catches on untrawlable bottom included lingcod Ophiodon elongatus, thornyhead Sebastolobus alascanus, and 13 rockfish species but were dominated by four species: sharpchin rockfish Sebastes zacentrus (70%), red-banded rockfish S. babcocki (4%), greenstriped rockfish S. elongatus (4%), and bocaccio S. paucispinis (4%). Although the same number of species were caught on trawlable bottom, catches were dominated by Pacific ocean perch Sebastes alutus (37%), splitnose rockfish S. diploproa (23%), greenstriped rockfish (13%), and bocaccio (7%). In addition, significantly more fish per set were caught on hard-bottom (untrawlable) areas: 78.3 fish (rockfish and lingcod)/set on untrawlable bottom, compared to 31.0 fish/set on trawlable bottom. Differences in numbers/set and species composition indicate differences in fish assemblages in the two areas.

RÉSUMÉ

Matthews, K. R., J. R. Candy, L. J. Richards, and C. M. Hand. 1989. Experimental gill net fishing on trawlable and untrawlable areas off northwestern Vancouver Island, from the MV CALEDONIAN August 15-28, 1989. Can. MS Rep. Fish. Aquat. Sci. 2046: 78 p.

Le présent rapport résume les résultats d'une expédition de recherche menée au large de la pointe nord-ouest de l'île de Vancouver du 15 au 28 août 1989. L'expérience visait à déterminer la composition des populations de sébastes vivant au-dessus de fonds durs (non chalutables) et à les comparer à celles se trouvant au-dessus de fonds mous (chalutables). Pour capturer du poisson au-dessus des fonds durs, on a mis à l'eau et retiré des filets maillants dérivant en profondeur, à partir d'un chalutier commercial affrété, le MV CALEDONIAN. Les captures ont eu lieu au-dessus du talus continental, à une profondeur de 200 à 300 mètres, dans des habitats de deux types différents: fonds dure considérés comme non chalutables et fonds mous typiques des zones exploitées par les chalutiers commerciaux. La composition en espèces variait d'un habitat à l'autre. Sur les fonds non chalutables, on a capturé de la morue-lingue (Ophiodon elongatus), du sébastolobe à courtes épines (Sebastolobus alascanus) et 13 espèces de sébastes, en particulier les quatre espèces suivantes: sébaste à menton pointu, Sebastes zacentrus (70% des prises), sébaste à bandes rouges, S. babcocki (4%), sébaste à bandes vertes, S. elongatus (4%) et boccacio, S. paucispinis (4%). Bien qu'on ait capturé des spécimens d'autant d'espèces au-dessus des fonds chalutables, dans ce cas les prises étaient dominées par le sébaste à longue mâchoire, Sebastes alutus (37%), le bec-de-lièvre, S. diploproa (23%), le sébaste à bandes vertes (13%) et le boccacio (7%). De plus, on a capturé beaucoup plus de poissons par jeu de filets au-dessus des fonds non chalutables, soit 78,3 poissons (sébaste et morue-lingue) par rapport à 31,0 poissons au-dessus des fonds chalutables. Les différences dans les prises par jeu de filets et la composition en espèces traduisent des différences entre les deux habitats sur le plan de la diversité spécifique.

INTRODUCTION

This report summarizes cruise results from a fishing vessel operating off northwestern Vancouver Island between August 15-28, 1989. The purpose of the survey was to describe rockfish communities on hard-bottom (untrawlable) and to compare them with those on smooth-bottom (trawlable). In order to fish hard-bottom areas, the MV CALEDONIAN, a chartered commercial trawl vessel, deployed and retrieved sunken gill nets.

The survey was motivated by the hypothesis that hard-bottom areas provide refuge for rockfish, in particular, Pacific ocean perch (Sebastes alutus), from the commercial trawl fishery. If this hypothesis were true, then potential yields from these stocks would be greater than currently estimated. At present, little is known about fish communities on deep, hard-bottom habitats. Results of the first survey to examine this hypothesis are described by Matthews et al. 1989; here we report the results of the second survey. Fishing was conducted on the continental slope between 200-300 m, on two habitat types: hard-bottom and smooth-bottom habitats.

The commercial rockfish fishery operates by bottom trawl, midwater trawl, and various line methods. Trawl gear could not be used on this survey, however, because of the high risk of net damage. Line methods were also impractical, as they tend to be too selective for the species and sizes of fish caught. As an alternative, we used a modified sunken gill net. The specific objective of the survey was to compare, with the use of sunken gill nets, the species composition of commercially important fish caught on hard and smooth-bottom areas.

The survey was conducted off the northwestern coast of Vancouver Island (Fig. 1). This is one area where hard-bottom habitat is found within the depth range of Pacific ocean perch. This area was selected due its proximity to both trawlable and untrawlable habitats, and to the ease of access.

FISHING METHODS

VESSEL AND FISHING GEAR

The CALEDONIAN, a 35 m (114 ft) trawler (Appendix Table 1), was awarded the charter for the fishing survey. To sample the species composition of fishes on hard and smooth-bottom areas, we used monofilament gill nets specifically designed for

deepwater use (Fig. 2) and set them directly on the bottom. The gill nets were deployed off the stern of the fishing vessel and brought aboard with the use of a hydraulic crab hauler. Each net was 37 m long and 7.3 m high with a mesh size of 7.6 cm.

Fishing began on August 16 and continued through August 25. Nets were set in the late afternoon and left overnight. On our first cruise (Matthews et al. 1989), several problems had occurred: the foam floats on the floatline collapsed after several sets, probably hampering the fishing ability of the nets, and the groundline broke on several occasions. Thus, we made several improvements to the nets; on this second cruise, we used hard plastic floats and heavy duty groundline (Dyrkorn 32 grade).

FISHING LOCATION

The continental shelf break between Quatsino Sound and Cape Scott (Fig. 1) was chosen as our study area because commercial fishermen reported both trawlable and untrawlable habitats there. We directed our fishing effort to two discrete areas (Fig. 1) at 200-300 m depths along the shelf dropoff. The areas were separated geographically (approximately 20 km apart) because the two habitat types could not be found in closer proximity. The trawlable area off Quatsino Sound is a commonly used trawl ground; the bottom topography is characterized by smooth rock. The untrawlable grounds near the Scott Islands were typical of areas avoided by commercial trawlers due to net damage (Capt. Robert Ingram, pers. comm.). A few fishermen sometimes bottom trawl in this area, but risk major net damage or net loss even though the net may be in the water for only a few minutes. The bottom topography is rough and appears craggy on the bottom sounder. Unfortunately, detailed geological information is unavailable for this area. Forty-five gill net sets were made on these two habitat types (exact locations in Appendix Table 2) at depths between 198-311 m. Nets were set where the continental shelf begins to slope (Fig. 3). Two additional sets were made in shallower (163 m) rough bottom pinnacles above the shelf dropoff to compare with results from our first cruise (Matthews et al. 1989).

BIOLOGICAL SAMPLING

Appendix Table 3 lists the common, scientific, and species codes used in the report. Our sampling strategy for the cruise was to collect information on rockfishes and lingcod with

the following priorities: (1) Sample all juvenile (<20 cm) rockfish for length (forklength (FL) to the nearest mm), otoliths, and weight, and freeze samples for later species verification or if large catches occur. (2) For commercially important rockfish with current management plans (Pacific ocean perch, rougheye rockfish S. aleutianus, silvergray rockfish S. brevispinus, widow rockfish S. entomelas, yellowtail rockfish S. flavidus, canary rockfish S. pinniger, redstripe rockfish S. proriger, yellowmouth rockfish S. reedi, yelloweye rockfish S. ruberrimus) record length (FL), sex, maturity status, and weight and collect otoliths. (3) For other rockfish species record length (FL measured to the nearest cm), sex, maturity status, and weight. On this cruise we caught high numbers of sharpchin rockfish S. zacentrus; after collecting complete data on 267 fish, we subsampled the remainder. In total, we collected complete data on 623 sharpchin rockfish. (4) For lingcod Ophiodon elongatus record length (FL), sex, maturity status, and weight and collect dorsal fin rays for ageing. Rockfish and lingcod were weighed with an electronic balance accurate to the nearest g. (5) All other species caught were identified and discarded at sea.

FISHING RESULTS AND DISCUSSION

Forty-five gill nets were set and 43 successfully retrieved (Appendix Table 4). Set No. 43, made on extremely rough bottom characterized by 20-30 m gulleys, was never retrieved. The groundline broke at both ends as we attempted to pull the net off the bottom. One set (Set No. 8) was brought to the surface but subsequently was snagged and torn on the boat's propeller; most of the fish fell from the net while we tried to free it from the boat. Although the entire net was eventually retrieved, the catch from set No. 8 was not included in our summary. The average soak time was 19.7 $\pm$ 0.4 h (S.E.) (Appendix Table 4). In most sets, we retrieved pieces of rock bottom or sponges and coral, verifying that the net was on the bottom.

The maturity and sex codes used in catch data tables are presented in Appendix Table 5a-5b. Raw catch data from the 43 sets are presented in Appendix Table 6. Eighteen commercially important species, 17 rockfishes, thornyhead Sebastolobus, and lingcod, were caught in the 43 gill net sets (Table 1a-1b). In the 43 sets, we caught 2244 rockfishes, thornyhead and lingcod (Appendix Table 6) from which we obtained 1807 lengths, 1235 weights, and 413 ageing structures. Incidental species caught during the survey and discarded at sea included Pacific halibut Hippoglossus stenolepis, longnose skate Raja rhina, sablefish

Anoplopoma fimbriata, turbot Atheresthes stomias, Pacific cod Gadus macrocephalus, ratfish Hydrolagus colliei, spiny dogfish Squalus acanthias, Pacific hake Merluccius productus, walleye pollock Theragra chalcogramma, and spotfin sculpin Icelinus tenuis (Table 2). Halibut were caught in most sets on both trawlable (12/20 sets) and untrawlable (14/21 sets) areas (Table 2).

The mean number of fish/set (rockfish and lingcod) was significantly lower (Mann-Whitney, $P<0.005$) on trawlable bottom than on untrawlable bottom (31.0 vs 78.3, Table 3). The same number of species (15) was caught on both areas, but the species composition was markedly different. Untrawlable areas were dominated by four species: sharpchin rockfish Sebastes zacentrus (70%), red-banded rockfish S. babcocki (4%), greenstriped S. elongatus (4%), and bocaccio S. paucispinus (4%) (Tables 3 & 4). On trawlable bottom, the catch was dominated by Pacific ocean perch Sebastes alutus (37%), splitnose rockfish S. diploproa (23%), greenstriped rockfish (13%), and bocaccio (7%).

On the shallower, pinnacle bottom the catch included lingcod and 9 rockfish species, and was dominated by red-banded rockfish (33%), canary rockfish (15%), and silvergray rockfish (13%) (Table 5). We had originally planned to make enough shallow sets to compare with our first cruise, however, time constraints at sea prevented this.

Length-frequency histograms are displayed for Pacific ocean perch, red-banded rockfish, greenstriped rockfish, bocaccio, yellowmouth rockfish, sharpchin rockfish, and lingcod on both trawlable and untrawlable bottom and for splitnose rockfish on the trawlable bottom (Fig. 4a-4h). Wilcoxon tests were used to test for differences in median lengths of fishes between the two bottom types, trawlable and untrawlable, when sample sizes were sufficiently large (>25 fish). Pacific ocean perch, red-banded rockfish, and sharpchin rockfish were significantly larger on the untrawlable area ($P<0.05$).

The 17 rockfish species were in a wide range of maturity stages, from immature to recovering from a recent spawning (Appendix Table 6). On trawlable bottom, most male (74%) and female (84%) Pacific ocean perch were mature (stage 3). On trawlable bottom, most males (88%) of all species were in stages 2-4, maturing through developed. Most (78%) females of all species on the trawlable bottom were in stage 7 (resting) or stage 2 (maturing). On the untrawlable bottom, most (80%) females of all species were in stage 7 and most males of all species (81%) were stage 3 (developing) and stage 4 (developed). All 26 lingcod caught on both trawlable and untrawlable areas and checked for maturity were mature females, stage 3.

It is difficult to determine whether differences in gill net catches on trawlable and untrawlable areas off northwestern Vancouver Island are representative of true differences in species composition. Few research trawls have been conducted in these areas to make comparisons. In July 1989, research trawling was conducted on the same trawlable grounds where we fished off Quatsino Sound. Pacific ocean perch and splitnose rockfish were the dominant species in two hauls made at similar depths (B. Leaman, DFO, unpublished data). These were the two species comprising the majority of our catch off Quatsino Sound. In addition, commercial trawl catches at similar depth ranges off northwestern Vancouver Island are dominated by Pacific ocean perch (Nagtegaal 1983). This suggests that our gill net catches are representative. Westrheim (1967, 1970) made two tows in September near our untrawlable grounds off the Scott Islands and, similar to our results, noted low numbers of Pacific ocean perch in the catch. However, unlike our survey, Westrheim's catch near the Scott Islands was dominated by yellowmouth rockfish.

There appears to be some bias in the species attracted to sunken gill nets, causing the catch to be overrepresented by piscivorous fish; on both cruises using gill nets, lingcod and bocaccio were often caught with fresh rockfish still in their mouths, apparently attracted to the nets by entangled rockfish. Lingcod and bocaccio catches were not as frequent on the second cruise, decreasing this bias. Although sunken gill nets are labor intensive and produce relatively low and variable numbers of fish, they catch a variety of commercially important species with a minimum of gear loss. Thus, they are effective for sampling the species composition of hard and smooth-bottom habitats. However, further work is necessary to confirm the trends reported here.

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Table 1a. A summary of the species composition, number of fish caught and the number of species for sunken gill net sets on the trawlable bottom near Quatsino Sound, August 15-28 1989.

Set No.	1	2	3	4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
Sebastes alutus	6	9	10	6	5	7	8	6	7	13	9	15	27	22	21	4	20	20	8	8	231
S. babcocki		4		4	1		1		4	2	3	3		1			4		5	2	34
S. brevispinis	1			1							1										3
S. crameri														2				1		1	4
S. diploproa			1				5		8	6	7	29			24	4	6	12	9	33	144
S. elongatus	2	4		4	4	2	11	2	17	5	5	3			2	8	4	1	2	2	78
S. entomelas				3																	3
S. flavidus	2			2																	4
S. helvomaculatus			1									1	1					1			4
S. paucispinis	1	1			4	1	3	5	3	3	6	3			3	4	2	2	4		45
S. proriger				7					3	3		1			1						15
S. reedi	2	1						1	1	3	1			1							10
S. zacentrus	2			6			1		4	1	4	6		1	1			3	5	3	37
Sebastolobus alascanus			1		1																2
Ophiodon elongatus												1				1	1	3	1		7
Totals No. of fish	16	19	13	33	15	10	29	14	47	36	36	62	28	27	52	21	37	43	34	49	621
No. of species	7	5	3	8	5	3	6	4	8	8	8	9	2	5	6	5	6	8	7	6	15

Table 1b. A summary of the species composition, number of fish caught, and the number of species for sunken gill net sets on untrawlable bottom near Scott Islands, August 15-28, 1989.

Set No.	5	6	7	11	12	13	14	31	32	33	34	35	36	37	38	39	40	41	42	44	45	Total
Sebastes aleutianus										1										1		2
S. alutus	1	1	4	2	2	1	8					1						1		1	3	25
S. babcocki	20	20	6	7	4	8	11	10	7	12	3	17	9	7	17	2	5	18	19	30		232
S. borealis					1				1													2
S. brevispinis	4	4	1	1		1		2	1	2			1		2			1	1	2		23
S. diploproa				1																		1
S. elongatus	5		8	11	7		18	2	2	1	3	1		2	1							61
S. helvomaculatus			1			1		1			1	1	1		2			1		2		11
S. paucispinis	12	11		5	4	1	1	4		4	2	5		2	3		2	5	4	3		68
S. proriger				2	1								1							1		5
S. reedi	7	6	3	1	1	6	1	3		1	1	7	6	1	3	2	2	1		2		54
S. ruberrimus	1							1								1			1			4
S. zacentrus	181	260	56	28	9	50	18	74	32		56	36	112	9	73	19	8	16	90	7		1134
Sebastolobus alascanus							1															1
Ophiodon elongatus		1						1			1		2	2	5	2		3	2	2		21
Totals No. of fish	231	303	79	57	32	68	58	98	43	21	67	68	132	23	106	26	17	46	117	51	3	1623
No. of species	8	7	7	9	8	7	7	9	5	6	7	7	7	6	8	5	4	8	6	10	1	15

Table 2. A summary of the presence (+) of incidental species caught and the total number of sets containing each species for sunken gill net sets on the trawlable and untrawlable bottom August 15-28, 1989.

Trawlable Set No.	1	2	3	4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
Halibut	+	+	+	+	+	+		+	+	+	+	+				+	+			+	14
Sablefish	+						+				+					+	+			+	6
Turbot							+					+					+				3
Longnose skate	+		+																		2
Hake												+									1
Walleye pollock																	+				1

Untrawlable Set No.	5	6	7	11	12	13	14	31	32	33	34	35	36	37	38	39	40	41	42	44	45	Total
Halibut				+	+		+	+	+	+	+	+		+	+	+				+		12
Longnose skate	+					+	+	+	+		+	+										7
Sablefish	+											+										2
Dogfish				+																		1
Pacific cod				+																		1
Ratfish											+											1
Spotfin sculpin			+																			1

Table 3. A summary of the mean number of fish, mean number of species caught, and dominant species for sets 1-45, excluding sets 8, 9, 10, and 43.

Habitat type	Mean # fish/set + SE	Mean # species/set +SE	Dominant species
Trawlable	31.0 $\pm$ 3.3	6.0 $\pm$ 0.4	POP, SN, GS, BOC
Untrawlable	78.4 $\pm$ 15.8	6.8 $\pm$ 0.4	SC, BAB, GS, BOC

Table 4a. A summary of the species catch as a proportion of each set and the total catch for the sunken gill nets on trawlable bottom, August 15-28, 1989 off Quatsino Sound.

Set No.	1	2	3	4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Proportion of total catch
Sebastes alutus	0.38	0.47	0.83	0.18	0.33	0.70	0.28	0.43	0.15	0.36	0.25	0.24	0.96	0.81	0.40	0.19	0.54	0.47	0.24	0.16	0.37
S. babcocki		0.21		0.12	0.07		0.03		0.09	0.06	0.08	0.05		0.04			0.11		0.15	0.04	0.05
S. brevispinis	0.06			0.03							0.03										0.01
S. crameri														0.07				0.02		0.02	0.01
S. diplopora			0.08				0.17		0.17	0.17	0.19	0.47			0.46	0.19	0.16	0.28	0.26	0.67	0.23
S. elongatus	0.13	0.21		0.12	0.27	0.20	0.38	0.14	0.36	0.14	0.14	0.05			0.04	0.38	0.11	0.02	0.06	0.04	0.13
S. entomelas				0.09																	0.01
S. flavidus	0.13			0.06																	0.01
S. helvomaculatus			0.08		0.07							0.02	0.04					0.02			0.01
S. paucispinis	0.06	0.05			0.27	0.10	0.10	0.36	0.06	0.08	0.17	0.05			0.06	0.19	0.05	0.05	0.12		0.07
S. proriger				0.21					0.06	0.08		0.02			0.02						0.02
S. reedi	0.13	0.05						0.07	0.02	0.08	0.03			0.04							0.02
S. zacentrus	0.13			0.18			0.03		0.09	0.03	0.11	0.10		0.04	0.02			0.07	0.15	0.06	0.06
Sebastolobus alascanus			0.01		0.01																0.01
Ophiodon elongatus												0.02				0.05	0.03	0.07	0.03		0.01

Table 4b. A summary of the species catch as a proportion of each set and the total catch for the sunken gill nets on untrawlable bottom August 15-28, 1989 off the Scott Islands.

Set No.	5	6	7	11	12	13	14	31	32	33	34	35	36	37	38	39	40	41	42	44	45	Totals
Sebastes aleutianus	0.00									0.05										0.02		0.01
S. alutus			0.05	0.03	0.07	0.01	0.14					0.01						0.02		0.02	1.00	0.02
S. babcocki	0.09	0.07	0.08	0.12	0.14	0.12	0.19	0.10	0.16	0.57	0.04	0.25	0.07	0.30	0.16	0.08	0.29	0.39	0.16	0.59		0.14
S. borealis					0.03				0.02													0.01
S. brevispinis	0.02	0.01	0.01	0.02		0.01		0.02	0.02	0.10			0.01		0.02			0.02	0.01	0.04		0.01
S. diploproa				0.02																		0.01
S. elongatus	0.02		0.10	0.19	0.24		0.31	0.02	0.05	0.05	0.04	0.01		0.09	0.01							0.04
S. helvomaculatus			0.01			0.01	0.02	0.01			0.01	0.01	0.01		0.02			0.02		0.04		0.01
S. paucispinis	0.05	0.04		0.09	0.14	0.01	0.02	0.04		0.19	0.03	0.07		0.09	0.03		0.12	0.11	0.03	0.06		0.04
S. proriger				0.03	0.03								0.01							0.02		0.01
S. reedi	0.03	0.02	0.04	0.02	0.03	0.09	0.02	0.03		0.05	0.01	0.10	0.05	0.04	0.03	0.08	0.12	0.02		0.04		0.03
S. ruberrimus								0.01								0.04			0.01			0.01
S. zacentrus	0.78	0.86	0.71	0.48	0.31	0.74	0.31	0.76	0.74		0.84	0.53	0.85	0.39	0.69	0.73	0.47	0.35	0.77	0.14		0.70
Sebastolobus alascanus							0.01															0.01
Ophiodon elongatus								0.01			0.01		0.02	0.09	0.05	0.08		0.07	0.02	0.04		0.01

Table 5. A summary of the species composition and number of fish caught for sunken gill nets set on untrawlable bottom at shallow depths near the Scott Islands, August 15-28, 1989.

Set No.	9	10	Total
Sebastes babcocki	6	12	18
S. brevispinis	4	3	7
S. entomelus		1	1
S. flavidus		1	1
S. helvomaculatus	1	5	6
S. pinniger	1	7	8
S. proriger	2	1	3
S. ruberrimus	4		4
S. zacentrus	2	1	3
Ophiodon elongatus	1	3	4
Total No. of fish	21	43	55
No. of species	8	9	10

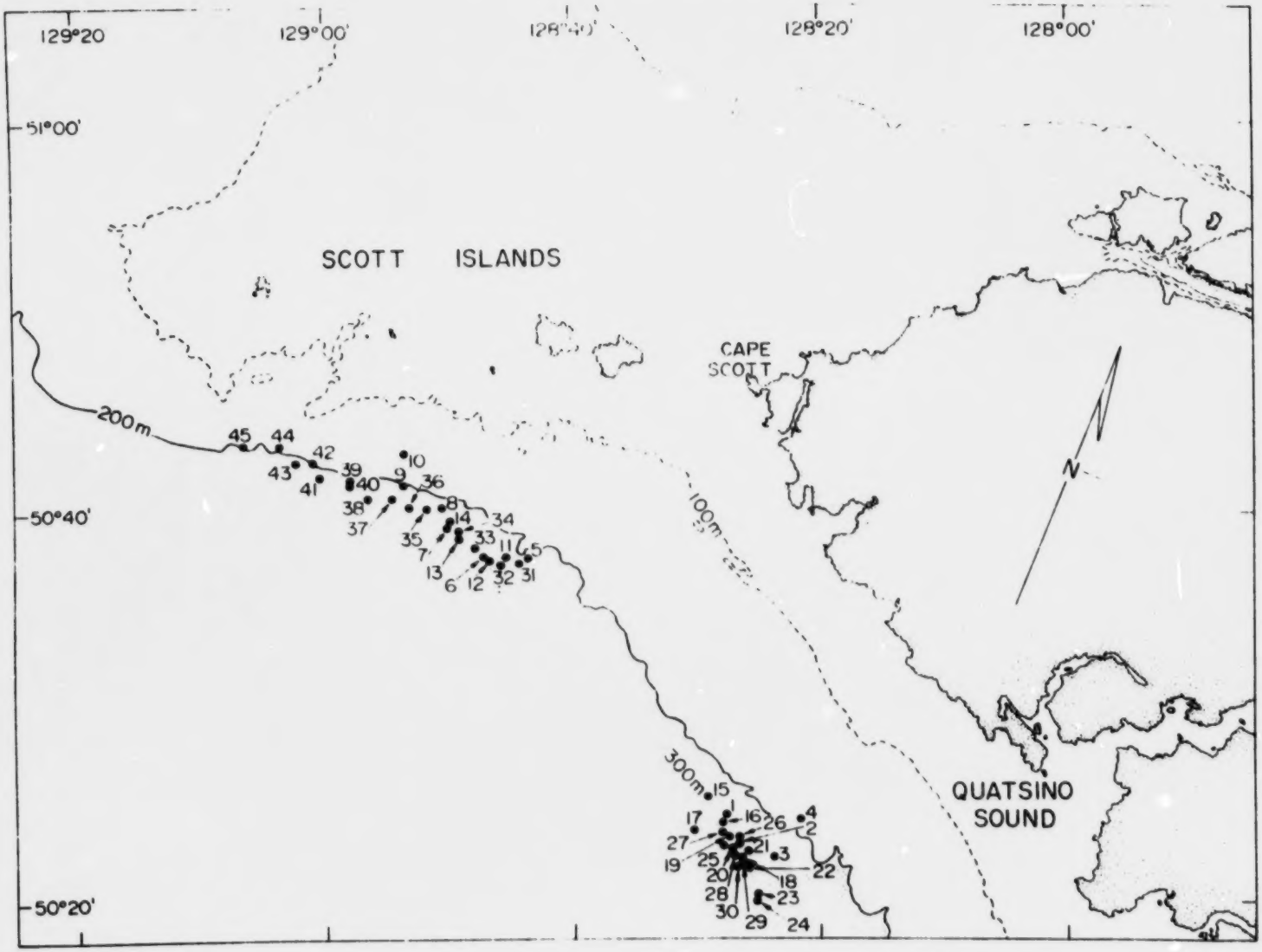
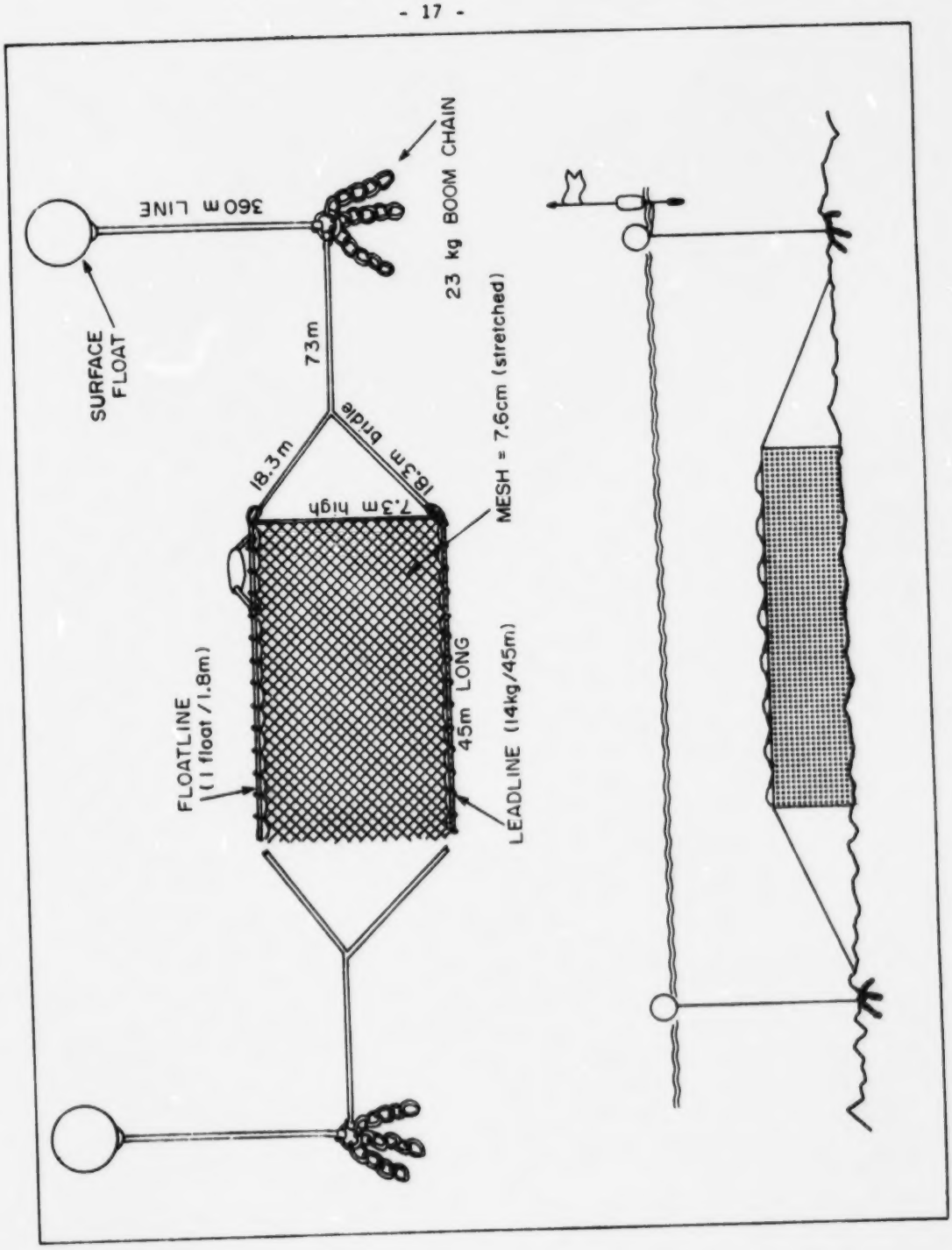


Fig. 1. Relative locations of gill net sets Nos. 1-45 between Quatsino Sound and Scott Islands.

Fig. 2. Specifications of sunken gill net.


360 m LINE
SURFACE FLOAT
73m
23 kg BOOM CHAIN
18.3m
18.3m bridle
7.3m high
MESH = 7.6cm (stretched)
FLOATLINE (1 float / 1.8m)
45m LONG
LEADLINE (14kg/45m)

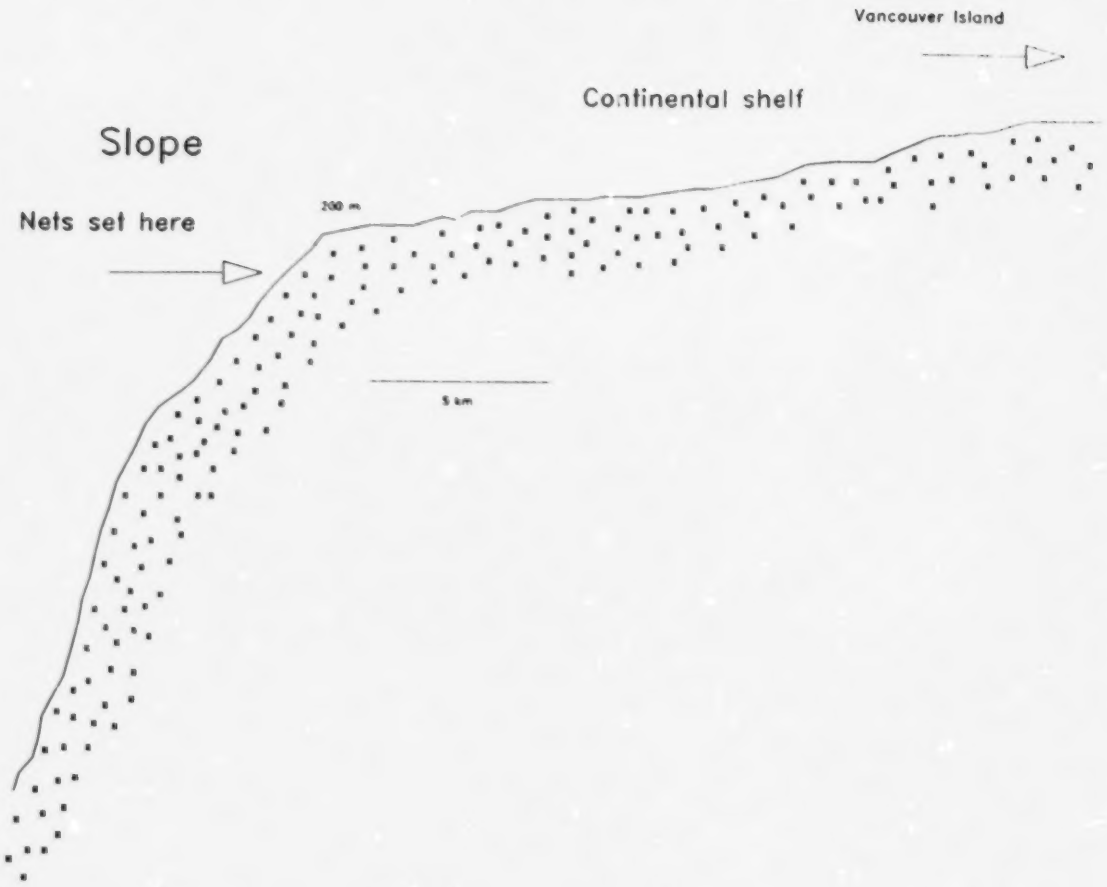


Fig. 3. Location of nets set along continental slope.

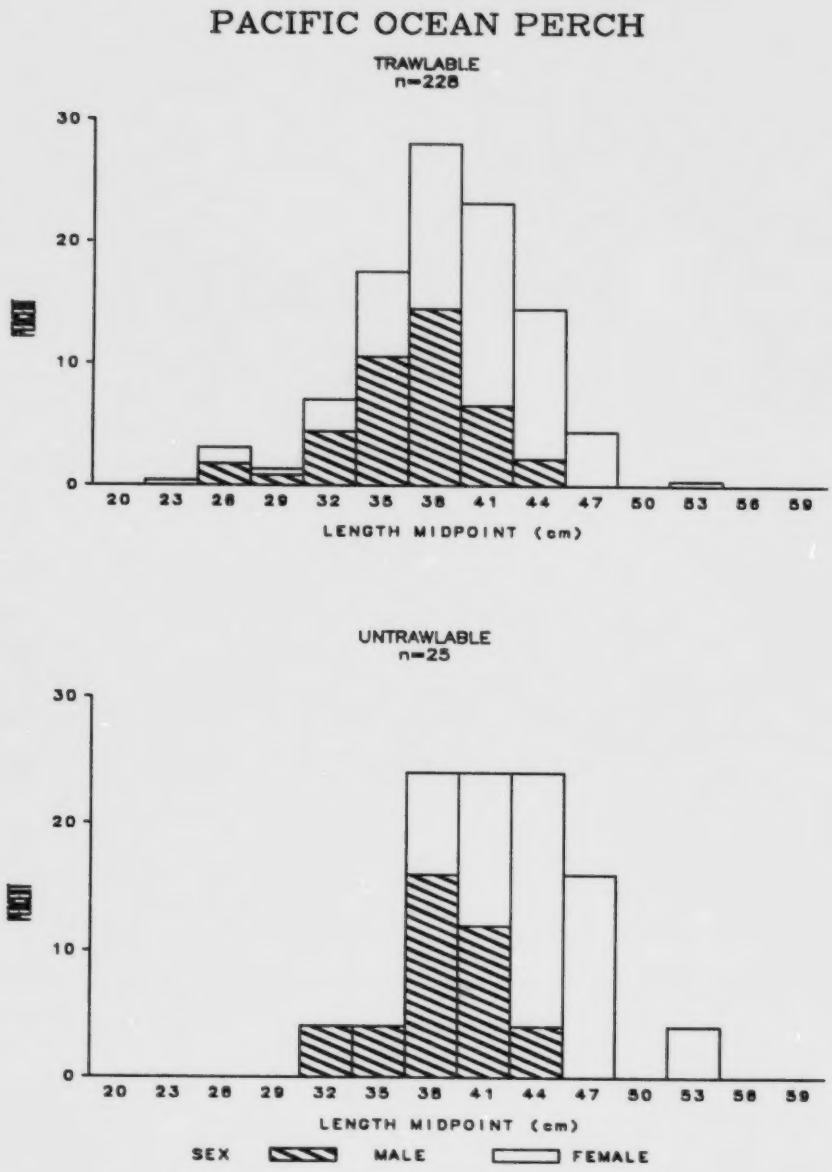


Fig. 4a. Length-frequency histograms by sex and habitat type for Pacific ocean perch. Length (cm) is the midpoint for the size interval.

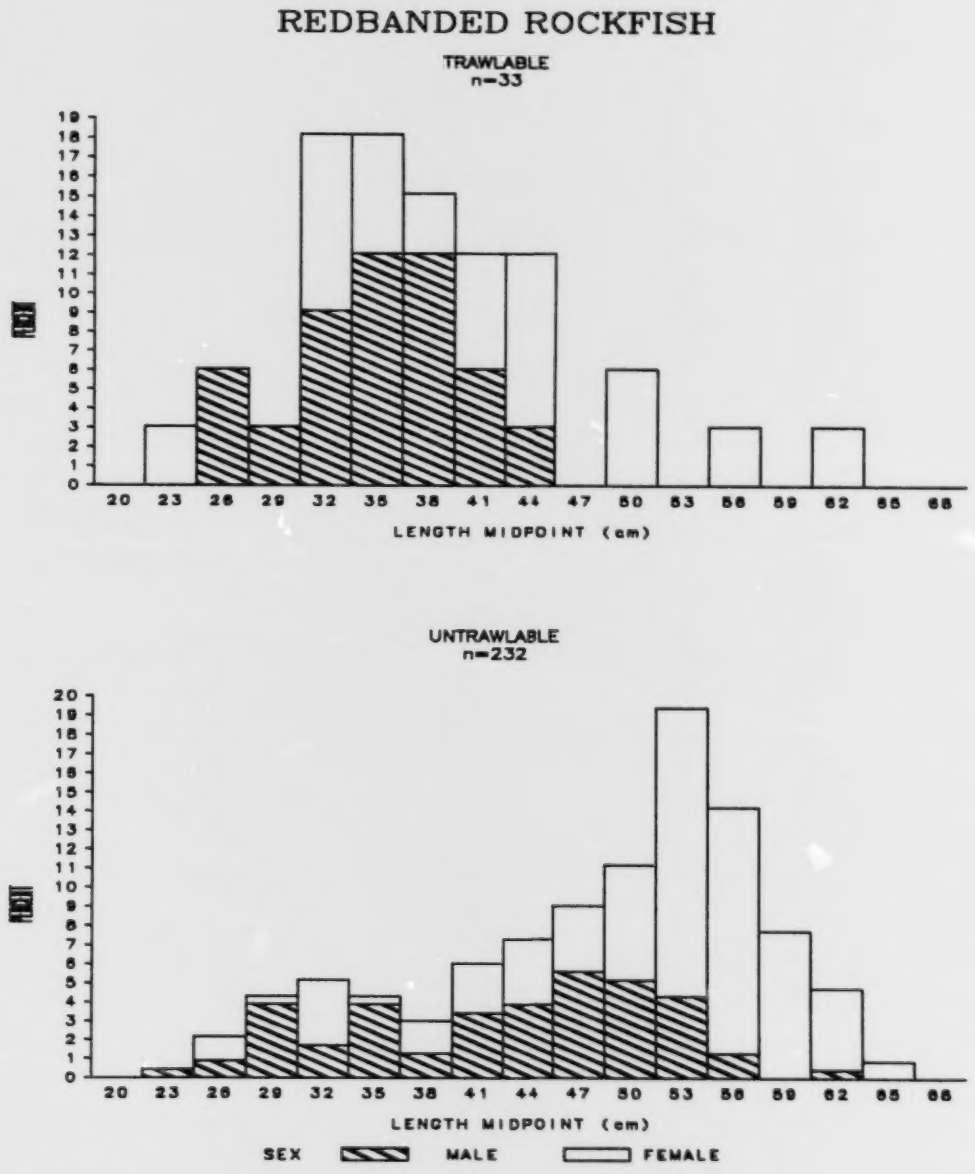


Fig. 4b. Length-frequency histograms by sex and habitat type for red-banded rockfish. Length (cm) is the midpoint for the size interval.

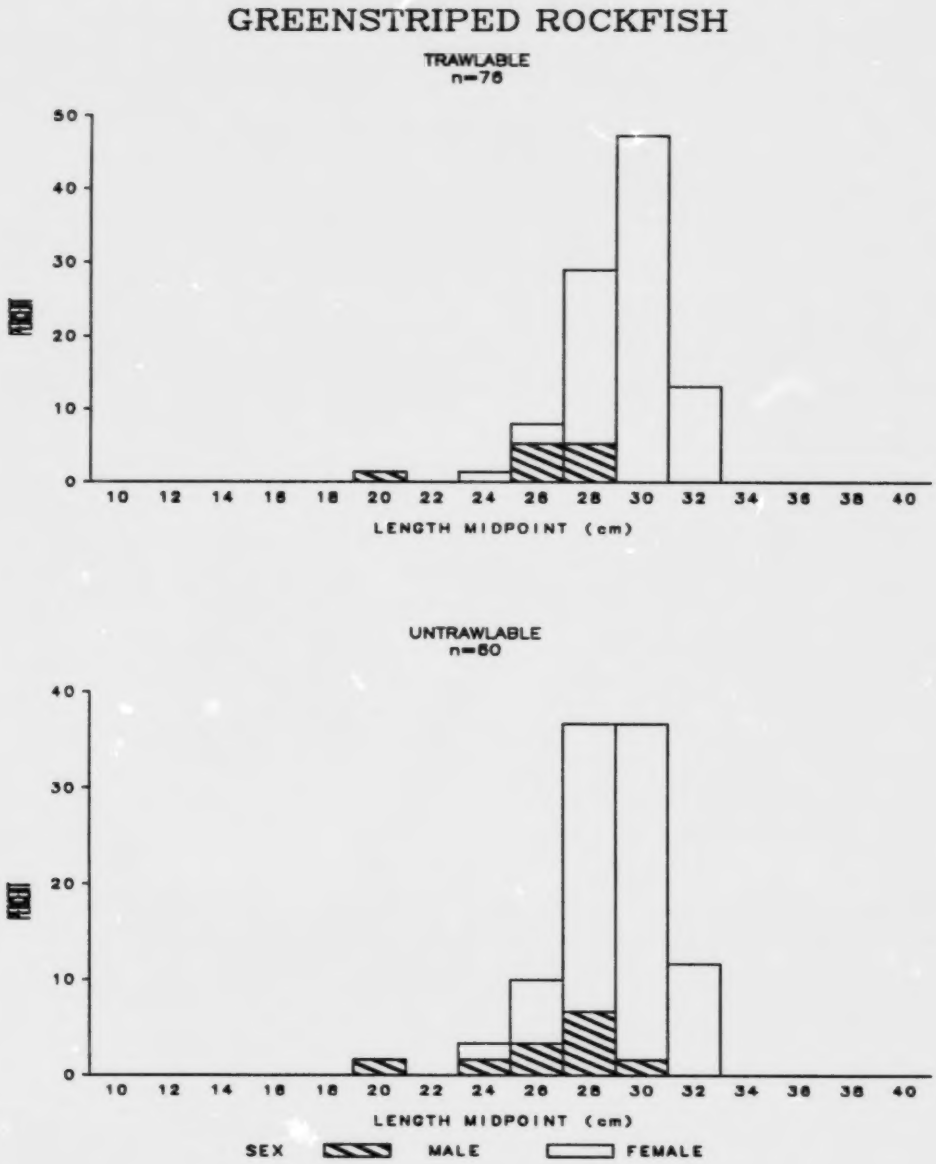


Fig. 4c. Length-frequency histograms by sex and habitat type for greenstriped rockfish. Length (cm) is the midpoint for the size interval.

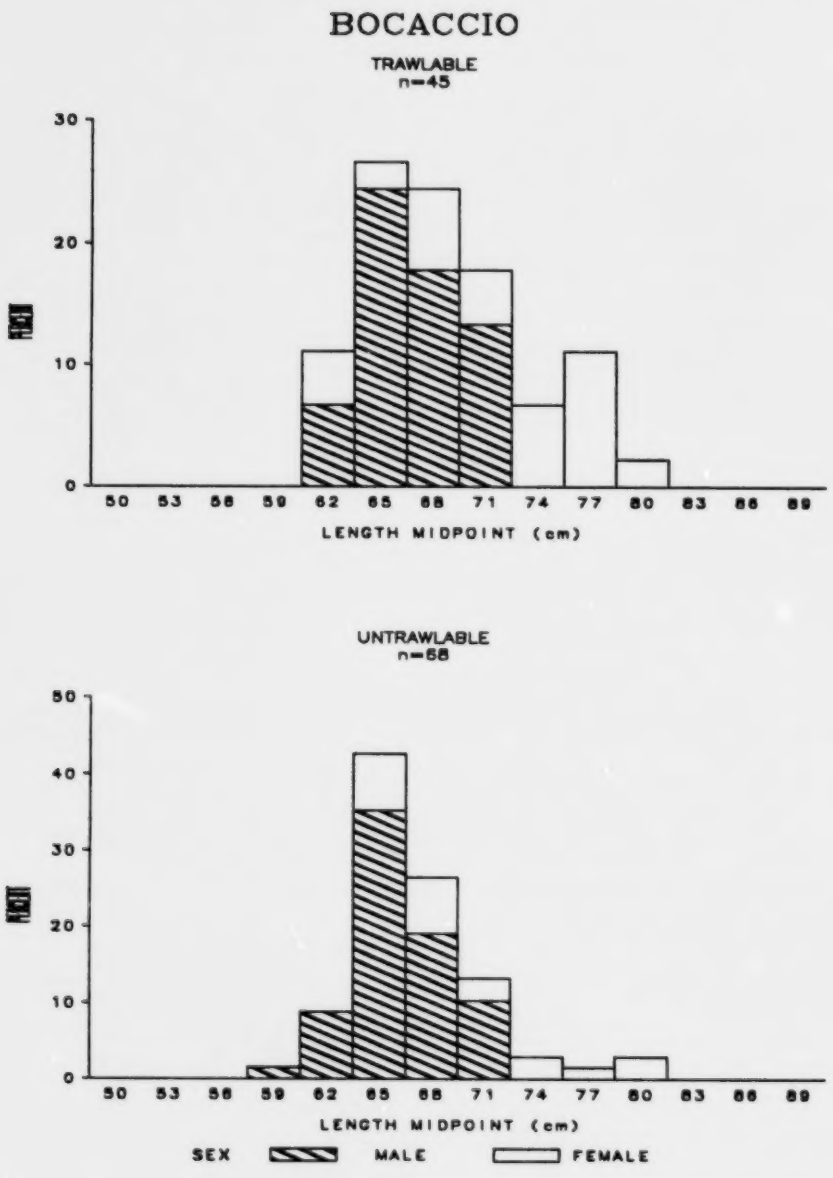


Fig. 4d. Length-frequency histograms by sex and habitat type for bocaccio. Length (cm) is the midpoint for the size interval.

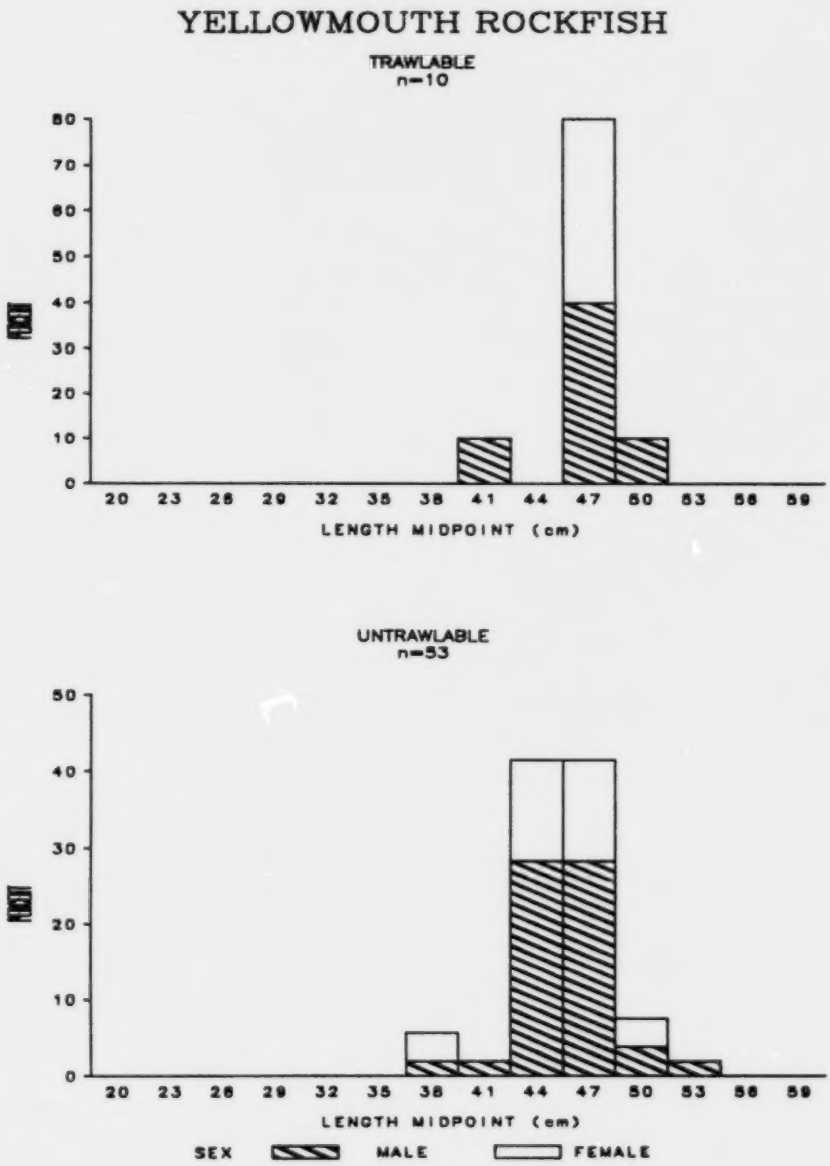


Fig. 4e. Length-frequency histograms by sex and habitat type for yellowmouth rockfish. Length (cm) is the midpoint for the size interval.

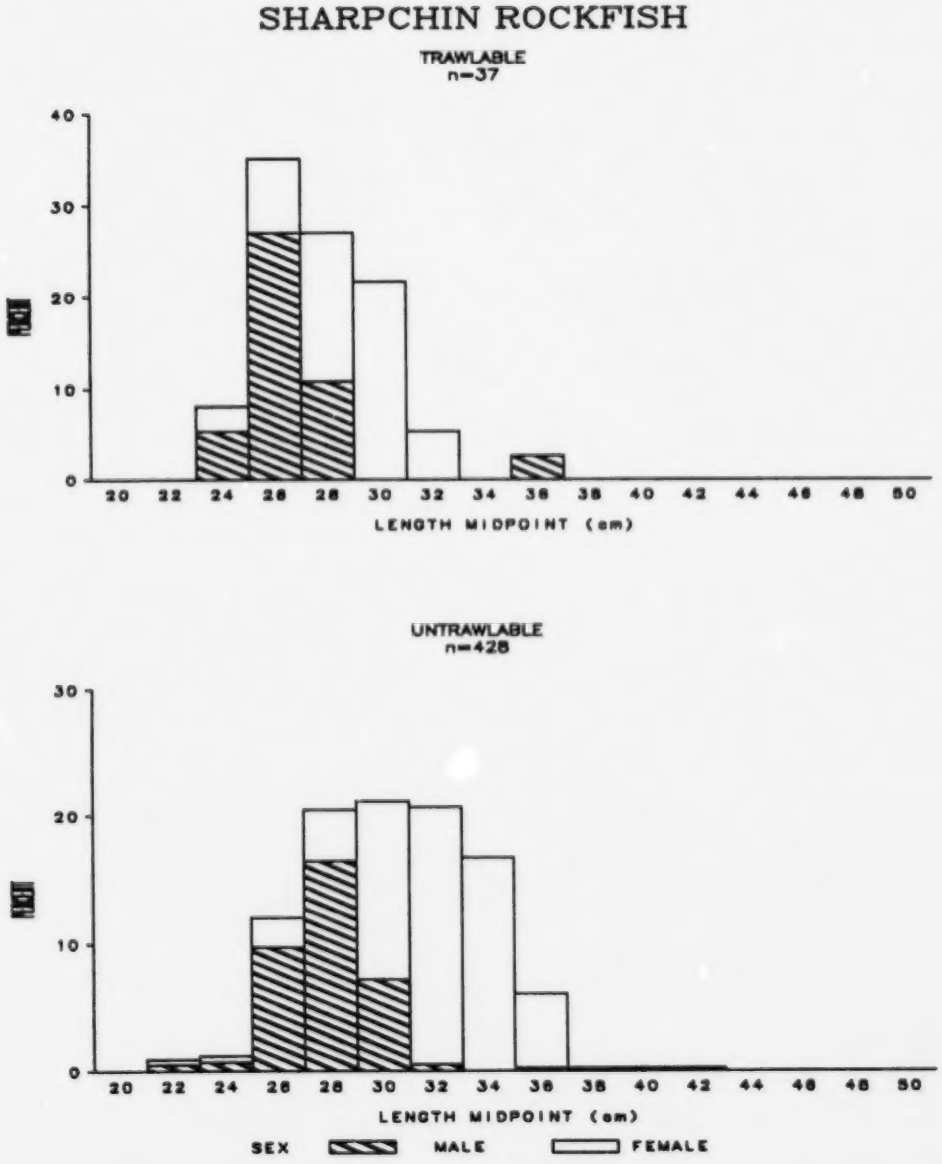


Fig. 4f. Length-frequency histograms by sex and habitat type for sharpchin rockfish. Length (cm) is the midpoint for the size interval.

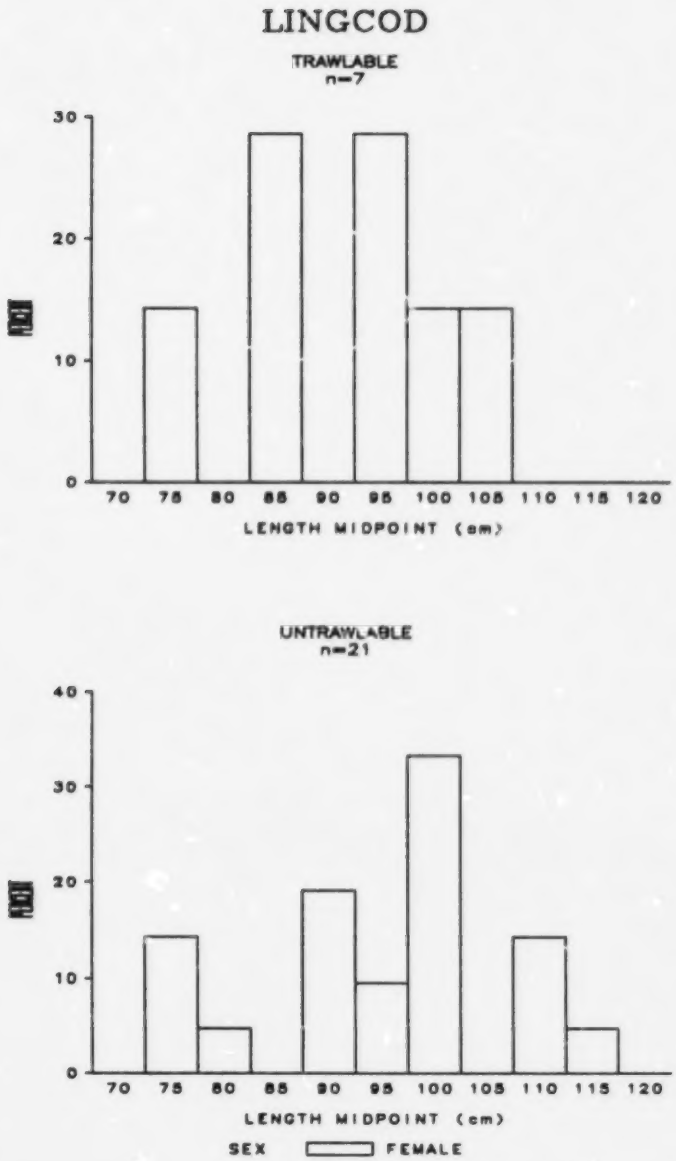


Fig. 4g. Length-frequency histograms by sex and habitat type for lingcod. Length (cm) is the midpoint for the size interval.

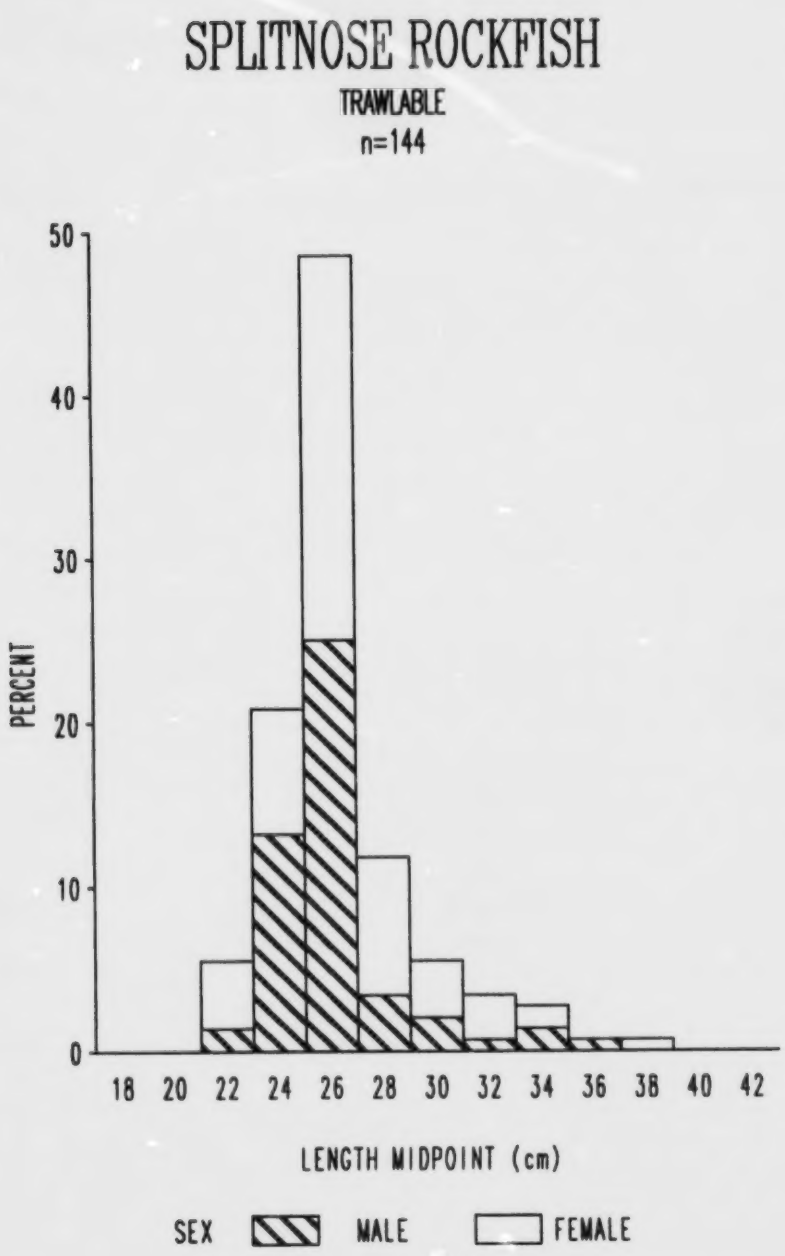


Fig. 4h. Length-frequency histograms by sex for splitnose rockfish on the trawlable bottom. Length (cm) is the midpoint for the size interval.

Appendix Table 1. Vessel specifications.

Name: Caledonian	Length: 35 m	Beam: 8.1 m	
Engine type: Caterpiller diesel	Speed (cruising): 9.5-10 kn		
Depth sounders: Furuno, Epsco			
Skipper: Captain Robert Ingram			
No. of crew: 3			
Year built: 1974			

Appendix Table 2. A summary of the location, depth and bottom types of the 45 sunken gill net sets made from August 15-28, 1989 off Quatsino Sound and Scott Islands.

Set #	Latitude	Longitude	Depth (m)	Bottom type
1	50°24.51'	128°27.43'	216	Trawlable
2	50°22.23'	128°26.16'	221	Trawlable
3	50°22.10'	128°23.90'	221	Trawlable
4	50°24.16'	128°21.43'	198	Trawlable
5	50°37.08'	128°43.74'	207	Untrawlable
6	50°38.09'	128°46.97'	223	Untrawlable
7	50°39.06'	128°50.08'	225	Untrawlable
8	50°40.75'	128°50.39'	207	Untrawlable
9	50°43.45'	128°52.02'	163	Untrawlable
10	50°43.63'	128°53.46'	163	Untrawlable
11	50°38.14'	128°45.29'	219	Untrawlable
12	50°38.55'	128°46.50'	219	Untrawlable
13	50°39.12'	128°49.22'	225	Untrawlable
14	50°39.58'	128°49.57'	225	Untrawlable
15	50°25.75'	128°28.97'	219	Trawlable
16	50°24.58'	128°27.79'	219	Trawlable
17	50°24.00'	128°28.15'	232	Trawlable
18	50°22.78'	128°26.43'	229	Trawlable
19	50°23.63'	128°27.66'	230	Trawlable
20	50°23.18'	128°27.07'	230	Trawlable
21	50°22.78'	128°26.12'	229	Trawlable
22	50°22.25'	128°26.02'	243	Trawlable

Appendix Table 2 (cont.)

Set #	Latitude	Longitude	Depth (m)	Bottom type
23	50°21.04′	128°24.74′	311	Trawlable
24	50°21.04′	128°24.74′	311	Trawlable
25	50°23.03′	128°26.72′	225	Trawlable
26	50°23.48′	128°27.38′	234	Trawlable
27	50°23.78′	128°28.12′	251	Trawlable
28	50°22.75′	128°24.65′	238	Trawlable
29	50°22.43′	128°25.58′	260	Trawlable
30	50°22.43′	128°25.58′	260	Trawlable
31	50°37.05′	128°44.06′	216	Untrawlable
32	50°38.19′	128°45.49′	218	Untrawlable
33	50°38.55′	128°47.88′	220	Untrawlable
34	50°38.65′	128°48.38′	229	Untrawlable
35	50°40.67′	128°52.02′	229	Untrawlable
36	50°47.07′	128°53.47′	225	Untrawlable
37	50°40.76′	128°54.54′	223	Untrawlable
38	50°41.22′	128°56.26′	229	Untrawlable
39	50°41.91′	128°57.87′	228	Untrawlable
40	50°41.91′	128°57.87′	228	Untrawlable
41	50°42.53′	129°00.11′	227	Untrawlable
42	50°42.80′	129°00.96′	218	Untrawlable
43	50°43.77′	129°02.29′	229	Untrawlable
44	50°43.78′	129°04.18′	210	Untrawlable
45	50°43.82′	129°06.61′	274	Untrawlable

Appendix Table 3. List of common names, species codes, and scientific names of species caught during the survey.

Common name	Species code	Scientific name
Rougheye rockfish	RE	*Sebastes aleutianus*
Pacific ocean perch	POP	*S. alutus*
Red-banded rockfish	BAB	*S. babcocki*
Shortraker rockfish	SR	*S. borealis*
Silvergray rockfish	SG	*S. brevispinis*
Darkblotched rockfish	DB	*S. crameri*
Splitnose rockfish	SN	*S. diploproa*
Greenstriped rockfish	GS	*S. elongatus*
Widow rockfish	WID	*S. entomelas*
Yellowtail rockfish	YT	*S. flavidus*
Rosethorn rockfish	ROSE	*S. helvomaculatus*
Bocaccio	BOC	*S. paucispinis*
Canary rockfish	CAN	*S. pinniger*
Redstripe rockfish	RS	*S. proriger*
Yellowmouth rockfish	REE	*S. reedi*
Yelloweye rockfish	YE	*S. ruberrimus*
Sharpchin rockfish	SC	*S. zacentrus*
Thornyhead	SEB	*Sebastolobus alascanus*
Lingcod	LC	*Ophiodon elongatus*

Appendix Table 4. A summary of the date, time of day, and total hours soaked for the 45 sunken gill net sets made from August 15-28, 1989 off Quatsino Sound and Scott Islands.

Set No.	Date (August 1989)	Time	Total hours
1	16-17	17:20-11:20	18:00
2	16-17	18:00-17:00	23:00
3	16-17	18:40-10:25	17:05
4	16-17	19:00-08:50	13:50
5	17-18	13:30-14:20	24:50
6	17-18	14:00-10:00	20:00
7	17-18	14:40-11:20	20:00
8	17-18	14:50-09:55	18:05
9	17-18	15:40-08:00	16:40
10	17-18	15:45-08:40	16:55
11	18-19	16:10-12:25	20:15
12	18-19	16:30-11:50	19:20
13	18-19	16:50-10:50	18:00
14	18-19	17:10-09:50	16:40
15	19-20	15:00-11:30	20:30
16	19-20	15:20-12:30	21:10
17	19-20	15:40-10:00	18:20
18	19-20	16:20-09:00	16:40
19	20-21	14:00-12:45	22:45
20	20-21	14:15-11:55	21:40
21	20-21	14:30-10:50	20:20
22	20-21	14:50-10:00	19:10
23	20-21	15:15-08:45	17:30
24	20-21	15:15-08:45	17:30
25	21-22	14:00-12:20	22:20
26	21-22	14:10-11:40	21:30

Appendix Table 4 (cont.)

Set No.	Date (August 1989)	Time	Total hours
27	21-22	14:30-11:00	20:30
28	21-22	14:40-10:00	19:20
29	21-22	15:00-08:35	17:35
30	21-22	15:00-08:35	17:35
31	22-23	15:00-08:30	17:30
32	22-23	15:15-10:10	18:55
33	22-23	15:30-11:00	19:30
34	22-23	15:45-11:40	19:55
35	23-24	15:30-08:15	16:45
36	23-24	13:45-09:05	19:20
37	23-24	14:00-10:00	20:00
38	23-24	14:15-10:50	20:35
39	23-24	14:30-11:50	21:20
40	23-24	14:30-11:50	21:20
41	24-25	13:20-12:00	22:40
42	24-25	13:30-13:00	23:30
43	24-25	13:50	never retrieved
44	24-25	14:00-14:45	24:45
45	24-25	14:30-15:30	25:00

mean hrs/set= 19.7 $\pm$ 0.4

Appendix Table 5a. Codes used to describe rockfish maturity stages, from Nagtegaal and Farlinger (1980), based on maturity stages described by Westrheim (1975).

Maturity	Code	Gonad condition
	0	Unknown
	1	Immature
Females	2	Maturing (small, yellow eggs; translucent or opaque)
	3	Mature (large, orange-yellow eggs; opaque)
	4	Fertilized (large, orange yellow eggs; translucent)
	5	Embryos or larvae (including eyed eggs)
	6	Spent (large, flaccid, red ovaries, a few larvae may be present)
	7	Resting (moderate size, firm, red-gray ovaries)
	8	Resorbing
Males	2	Maturing (stringlike, translucent, white)
	3	Developing (swelling, brown-white)
	4	Developed (large, white; easily broken)
	5	Running (running sperm)
	6	Spent (flaccid, red)
	7	Resting (ribbon-like; small, brown)

Appendix Table 5b. Codes used to describe lingcod maturity stages, modified from Cass et al. (1984).

LINGCOD MATURITY CODES

Codes	Description- Gonad condition
0	unknown
1	immature; (males stringlike; females small)
2	immature; (males flat, transparent and slightly enlarged; females slightly enlarged)
females:	
3	ova are semi-transparent and less than 1 mm in diameter, ovaries fill one-third of the body cavity
4	ova are opaque and about 1 mm in diameter, ovaries fill two-thirds of the body cavity
5	ova are less than 2 mm in diameter, ovaries fill 80% of body cavity
6	ova are about 2 mm in diameter
7	ripe - ova are larger than 2 mm in diameter, ovaries visible, fill and distend body cavity
8	spent - ovary may be bloodshot and purple in colour, ovary is flaccid and about one-third to two-thirds of the body cavity
9	resorbing - old ova are large to opaque and degenerative
10	recovering - ovaries returning to pre-ripening (code 3), are firm and fill less than half the body cavity, new ova are small
11	resting - ovaries firm and fill less than one-third of the body cavity
males:	
3	testes enlarged, filling less than one-quarter of the body cavity and white to brown in colour
4	testes enlarged to two-thirds of the body cavity, cross-sections of the gonad will produce milt
7	ripe - testes are large and full of milt
8	spent - testes are flaccid, reduced in size and may contain some milt
11	resting - testes are less than one-third of the body cavity, usually brown in colour and devoid of milt

Appendix Table 6. Date, set number, depth, species, sex, length, weight, maturity and fish number. Data are sorted by habitat type, species, sex, and length. A fish number indicates that otoliths or fin rays were collected.

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
Trawlable - Quatsino Sound								
890821	21	229	POP	0	389	836		17692
890821	21	229	POP	0	270	213		
890817	2	221	POP	1	249	206	1	17614
890821	20	231	POP	1	256	214	1	17698
890817	4	198	POP	1	268	258	3	17627
890817	3	221	POP	1	270	260	1	17624
890822	30	260	POP	1	296	355	2	18711
890820	16	220	POP	1	301	537	3	17658
890817	3	221	POP	1	310	462	1	17622
890817	3	221	POP	1	317	442	1	17620
890821	22	243	POP	1	320	510	3	17717
890822	26	234	POP	1	320	460	3	18747
890821	24	311	POP	1	327	520	3	17729
890822	28	238	POP	1	330	553	3	18733
890822	30	260	POP	1	330	559	1	18715
890821	23	311	POP	1	331	501	3	17767
890820	17	232	POP	1	334	575	3	17665
890821	23	311	POP	1	334	547	3	17769
890822	27	251	POP	1	337	496	3	17775
890821	23	311	POP	1	338	476	3	17753
890822	25	225	POP	1	338	566	3	17799
890822	29	260	POP	1	339	612	3	
890821	24	311	POP	1	340	546	7	17728
890822	27	251	POP	1	340	560	3	17783
890822	28	238	POP	1	340	554	3	18719
890822	28	238	POP	1	340	570	3	18721
890821	24	311	POP	1	345	566	3	17735
890820	17	232	POP	1	346	596	4	17664
890822	28	238	POP	1	346	546	3	18736
890821	23	311	POP	1	351	649	3	17756
890821	23	311	POP	1	351	639	3	17764
890821	23	311	POP	1	353	581	3	17746
890821	24	311	POP	1	357	613	2	17733
890822	28	238	POP	1	357	626	3	18722
890821	23	311	POP	1	359	653	3	17765
890821	24	311	POP	1	359	564	3	17725
890821	23	311	POP	1	360	677	3	17758
890821	23	311	POP	1	360	636	3	17759
890822	27	251	POP	1	361	681	3	17781
890821	21	229	POP	1	363	670	3	17689
890821	22	243	POP	1	363	679	3	17719
890821	23	311	POP	1	364	675	7	17751
890821	22	243	POP	1	366	704	3	17718
890821	21	229	POP	1	368	675	2	17691

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890822	27	251	POP	1	368	673	3	17776
890821	23	311	POP	1	369	690	3	17750
890821	24	311	POP	1	370	734	3	17737
890822	26	234	POP	1	372	723	3	18749
890822	25	225	POP	1	375	692	3	18708
890822	27	251	POP	1	375	735	3	17771
890822	25	225	POP	1	378	716	3	18706
890822	27	251	POP	1	378	795	3	17773
890822	28	238	POP	1	378	801	3	18727
890821	23	311	POP	1	380	792	3	17760
890821	24	311	POP	1	380	816	4	17722
890820	17	232	POP	1	381	846	4	17661
890820	16	220	POP	1	382	667	3	17655
890820	18	229	POP	1	382	816	3	17667
890822	27	251	POP	1	382	773	3	17784
890817	3	221	POP	1	383	643	3	17625
890817	2	221	POP	1	385	820	3	17609
890817	3	221	POP	1	385	797	3	17621
890822	25	225	POP	1	387	783	3	17798
890822	28	238	POP	1	387	676	3	18724
890821	24	311	POP	1	388	892	3	17738
890821	24	311	POP	1	388	817	3	17742
890822	30	260	POP	1	388	696	3	18716
890821	22	243	POP	1	390	815	3	17712
890822	27	251	POP	1	390	806	3	17782
890821	24	311	POP	1	391	908	3	17730
890817	1	216	POP	1	392	822	4	17602
890817	2	221	POP	1	392	844	3	17611
890820	16	220	POP	1	392	764	3	17656
890822	25	225	POP	1	393	794	4	18703
890822	29	260	POP	1	393	922	3	18739
890817	2	221	POP	1	395	875	3	17612
890817	3	221	POP	1	395	850	7	17616
890821	19	231	POP	1	395	862	4	17681
890821	22	243	POP	1	395	870	3	17720
890820	16	220	POP	1	398	843	3	17657
890822	29	260	POP	1	400	972	3	18740
890822	30	260	POP	1	400	860	3	18712
890822	25	225	POP	1	402	978	3	18709
890821	21	229	POP	1	407	911	4	17686
890822	25	225	POP	1	407	992	3	17796
890820	18	229	POP	1	410	1007	4	17670
890821	19	231	POP	1	410	1010	3	17680
890821	21	229	POP	1	411	923	3	17688
890821	19	231	POP	1	413	977	3	17679
890817	4	198	POP	1	414	1085	3	17629
890817	4	198	POP	1	425	1212	4	17631
890821	24	311	POP	1	425	1255	2	17727
890821	24	311	POP	1	431	1297	7	17723
890822	27	251	POP	1	440	1317	3	17777
890817	2	221	POP	1	442	1431	4	17615
890817	3	221	POP	2		730	2	17619
890820	18	229	POP	2	238	184	1	17677
890821	20	231	POP	2	259	238	1	17697
890817	3	221	POP	2	269	268	1	17623
890822	27	251	POP	2	272	272	1	17785

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890822	27	251	POP	2	288	350	1	17788
890822	27	251	POP	2	305	402	1	17780
890821	20	231	POP	2	318	456	2	17693
890822	25	225	POP	2	318	983	2	18702
890821	23	311	POP	2	322	489	2	17768
890822	28	238	POP	2	328	470	1	18720
890822	25	225	POP	2	331	503	1	17790
890821	21	229	POP	2	340	503	2	17685
890821	20	231	POP	2	342	550	2	17704
890821	23	311	POP	2	346	570	2	17754
890821	22	243	POP	2	350	630	2	17715
890821	23	311	POP	2	355	608	2	17757
890820	15	220	POP	2	357	834	3	17676
890820	18	229	POP	2	358	653	3	17669
890821	24	311	POP	2	358	632	2	17739
890821	24	311	POP	2	359	638	2	17740
890822	30	260	POP	2	360	673	2	18717
890820	17	232	POP	2	362	655	2	17663
890821	24	311	POP	2	362	639	2	17726
890822	28	238	POP	2	362	663	2	18731
890821	23	311	POP	2	363	671	2	17747
890822	25	225	POP	2	363	644	2	17792
890822	29	260	POP	2	364	665	2	18741
890821	23	311	POP	2	365	714	2	17748
890821	24	311	POP	2	365	688	2	17724
890822	25	225	POP	2	365	754	2	17800
890821	20	231	POP	2	369	650	2	17699
890821	23	311	POP	2	369	745	2	17766
890822	28	238	POP	2	369	618	2	18729
890821	22	243	POP	2	370	706	2	17714
890821	23	311	POP	2	370	714	2	17762
890821	24	311	POP	2	371	657	2	17741
890822	25	225	POP	2	372	748	2	18701
890822	28	238	POP	2	372	709	3	18734
890822	29	260	POP	2	372	778	2	18744
890821	23	311	POP	2	374	756	2	17745
890821	24	311	POP	2	374	743	2	17732
890822	27	251	POP	2	377	809	7	17770
890822	25	225	POP	2	378	836	2	17791
890821	19	231	POP	2	380	811	2	
890821	23	311	POP	2	383	828	2	17749
890821	21	229	POP	2	385	851	2	17690
890821	23	311	POP	2	385	782	2	17743
890820	15	220	POP	2	386	773	3	17673
890820	17	232	POP	2	386	753	2	17660
890820	18	229	POP	2	389	911	3	17668
890817	2	221	POP	2	390	800	2	17613
890820	18	229	POP	2	390	924	3	17671
890821	22	243	POP	2	391	851	2	17713
890820	15	220	POP	2	392	866	3	17672
890821	22	243	POP	2	392	927	2	17710
890821	23	311	POP	2	392	796	2	17752
890822	28	238	POP	2	392	739	2	18732
890820	15	220	POP	2	393	814	4	17675
890821	24	311	POP	2	395	862	2	17721
890820	15	220	POP	2	396	858	3	17674

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890822	27	251	POP	2	397	875	2	17774
890822	28	238	POP	2	398	894	2	18728
890821	22	243	POP	2	400	891	2	17706
890820	16	220	POP	2	401	847	2	17653
890821	20	231	POP	2	401	903	2	17705
890822	25	225	POP	2	403	901	2	17795
890821	23	311	POP	2	404	946	2	17763
890822	27	251	POP	2	404	912	2	17772
890821	19	231	POP	2	405	973	2	17678
890821	19	231	POP	2	405	975	2	17683
890822	27	251	POP	2	405	861	2	17779
890820	17	232	POP	2	406	854	7	17659
890817	1	216	POP	2	407	865	2	17604
890821	24	311	POP	2	407	960	2	17736
890822	25	225	POP	2	407	965	2	17793
890817	1	216	POP	2	410	1035	2	17606
890817	4	198	POP	2	410	928	2	17626
890821	24	311	POP	2	410	1059	1	17731
890817	3	221	POP	2	411	865	2	17617
890821	23	311	POP	2	411	961	2	17755
890822	28	238	POP	2	411	992	2	18725
890822	28	238	POP	2	413	905	2	18737
890822	28	238	POP	2	415	1101	2	18730
890822	28	238	POP	2	415	929	2	18723
890822	29	260	POP	2	415	1050	2	
890817	1	216	POP	2	416	1016	2	17605
890822	30	260	POP	2	416	1028	2	18714
890821	19	231	POP	2	417	916	2	17682
890821	22	243	POP	2	418	1019	2	17708
890821	23	311	POP	2	418	1014	2	17761
890821	20	231	POP	2	420	1021	2	17701
890822	28	238	POP	2	420	914	2	18738
890820	17	232	POP	2	421	1075	3	17662
890821	24	311	POP	2	421	1061	2	17734
890820	16	220	POP	2	423	1014	2	17654
890820	16	220	POP	2	424	1071	2	17652
890821	22	243	POP	2	425	1063	2	17716
890822	25	225	POP	2	426	1080	2	18710
890822	25	225	POP	2	427	1123	2	17797
890820	17	232	POP	2	430	983	3	17666
890822	27	251	POP	2	430	1105	2	17786
890821	22	243	POP	2	431	1255	2	17709
890821	20	231	POP	2	432	1177	2	17695
890821	21	229	POP	2	432	1146	2	17687
890822	25	225	POP	2	432	1130	2	18707
890822	28	238	POP	2	435	1161	2	18726
890821	20	231	POP	2	438	1076	2	17696
890822	29	260	POP	2	439	1239	2	18743
890821	23	311	POP	2	443	1137	2	17744
890822	30	260	POP	2	444	1362	2	18718
890822	25	225	POP	2	445	1223	2	18705
890822	27	251	POP	2	445	1251	2	17787
890817	2	221	POP	2	446	1320	2	17610
890817	4	198	POP	2	446	1382	2	17630
890822	30	260	POP	2	447	1206	2	18713
890822	26	234	POP	2	448	1194	2	18750

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890821	20	231	POP	2	449	1226	2	17702
890817	1	216	POP	2	450	1115	2	17601
890817	4	198	POP	2	450	1338	2	17628
890822	26	234	POP	2	450	1366	2	18748
890822	29	260	POP	2	450	1244	2	18742
890821	20	231	POP	2	452	1392	2	17700
890817	2	221	POP	2	453	1370	2	17607
890817	2	221	POP	2	454	1380	2	17608
890822	28	238	POP	2	455	1312	2	18735
890822	25	225	POP	2	457	1387	2	18704
890822	25	225	POP	2	458	1457	2	17794
890817	1	216	POP	2	459	1324	2	17603
890817	3	221	POP	2	462	1356	2	17618
890821	20	231	POP	2	464	1476	2	17703
890821	22	243	POP	2	465	1488	2	17711
890821	20	231	POP	2	470	1595	2	17694
890822	27	251	POP	2	472	1507	2	17778
890822	27	251	POP	2	473	1578	2	17789
890821	22	243	POP	2	525	1177	2	17707
890817	2	221	BAB		573	3230		
890817	2	221	BAB	1	250	248	1	
890821	19	231	BAB	1	262	286	1	
890821	20	231	BAB	1	298	507	1	
890822	29	260	BAB	1	306	452	1	
890821	19	231	BAB	1	327	559	2	
890822	30	260	BAB	1	332	661	2	
890822	29	260	BAB	1	337	609	1	
890822	27	251	BAB	1	343	666	3	
890822	27	251	BAB	1	352	744	2	
890822	27	251	BAB	1	352	710	2	
890821	22	243	BAB	1	365	886	3	
890820	15	220	BAB	1	366	835	1	
890821	21	229	BAB	1	383	933	3	
890822	29	260	BAB	1	392	1155	7	
890821	22	243	BAB	1	395	1171	3	
890821	20	231	BAB	1	410	1261	2	
890821	19	231	BAB	1	435	1323	7	
890822	27	251	BAB	2	227	205	1	
890822	30	260	BAB	2	314	531	1	
890822	29	260	BAB	2	319	550	1	
890821	21	229	BAB	2	332	648	1	
890821	19	231	BAB	2	338	593	1	
890821	21	229	BAB	2	343	692	2	
890817	4	198	BAB	2	370	961	1	
890820	17	232	BAB	2	395	1070	7	
890817	4	198	BAB	2	397	1235	1	
890822	29	260	BAB	2	430	1388	7	
890817	2	221	BAB	2	437	1498	7	
890821	22	243	BAB	2	442	1460	7	
890817	2	221	BAB	2	509	2395	7	
890817	4	198	BAB	2	512	2741	7	
890817	4	198	BAB	2	565	3240	7	
890821	24	311	BAB	2	622	2570	7	
890817	1	216	SG	1	539	1932	7	17902
890817	4	198	SG	1	550	2562	7	17901
890821	21	229	SG	2	582	2725	7	17919

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890822	28	238	DB	1	324	648	3	
890821	24	311	DB	1	370	971	7	
890821	24	311	DB	1	373	955	7	
890822	30	260	DB	2	306	530	1	
890822	26	234	SN	1	210	150	1	
890822	27	251	SN	1	229	215	2	
890821	21	229	SN	1	230	200	1	
890822	28	238	SN	1	230	220	1	
890821	21	229	SN	1	231	209	1	
890822	27	251	SN	1	232	231	2	
890821	21	229	SN	1	235	221	2	
890822	29	260	SN	1	235	230	2	
890821	19	231	SN	1	237	226	2	
890821	22	243	SN	1	237	238	1	
890822	25	225	SN	1	241	231	2	
890822	30	260	SN	1	242	293	3	
890821	22	243	SN	1	243	257	2	
890822	25	225	SN	1	243	261	2	
890822	27	251	SN	1	243	242	2	
890821	21	229	SN	1	244	240	2	
890822	25	225	SN	1	244	256	2	
890822	30	260	SN	1	247	275	2	
890821	20	231	SN	1	248	273	2	
890821	22	243	SN	1	249	280	3	
890822	25	225	SN	1	249	301	3	
890822	25	225	SN	1	250	295	2	
890822	25	225	SN	1	250	264	2	
890822	26	234	SN	1	250	315	2	
890822	25	225	SN	1	252	270	2	
890821	22	243	SN	1	253	306	2	
890822	27	251	SN	1	253	292	2	
890822	30	260	SN	1	253	299	2	
890822	30	260	SN	1	253	266	2	
890821	22	243	SN	1	254	301	2	
890822	25	225	SN	1	254	291	2	
890822	30	260	SN	1	254	317	2	
890821	19	231	SN	1	255	299	3	
890822	25	225	SN	1	255	292	2	
890822	29	260	SN	1	255	307	2	
890822	30	260	SN	1	255	280	2	
890822	30	260	SN	1	255	298	2	
890822	30	260	SN	1	255	274	2	
890822	30	260	SN	1	255	292	2	
890822	30	260	SN	1	255	336	2	
890822	27	251	SN	1	256	331	3	
890822	28	238	SN	1	256	288	2	
890821	19	231	SN	1	257	314	2	
890822	25	225	SN	1	257	294	2	
890822	30	260	SN	1	257	278	2	
890821	19	231	SN	1	259	309	2	
890822	30	260	SN	1	259	316	3	
890822	30	260	SN	1	260	341	2	
890822	28	238	SN	1	262	305	2	
890822	29	260	SN	1	262	314	2	
890822	30	260	SN	1	262	318	2	
890822	30	260	SN	1	262	255	1	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890821	22	243	SN	1	264	308	3	
890821	22	243	SN	1	264	302	2	
890822	30	260	SN	1	264	331	2	
890822	30	260	SN	1	264	336	2	
890822	29	260	SN	1	265	309	2	
890821	22	243	SN	1	270	350	3	
890822	25	225	SN	1	270	378	2	
890821	22	243	SN	1	271	336	2	
890822	28	238	SN	1	277	375	3	
890821	22	243	SN	1	285	407	3	
890822	25	225	SN	1	298	500	3	
890821	22	243	SN	1	305	568	4	
890822	30	260	SN	1	307	531	3	
890822	30	260	SN	1	322	536	3	
890822	30	260	SN	1	336	780	4	
890821	22	243	SN	1	340	222	2	
890821	22	243	SN	1	357	292	2	
890817	3	221	SN	2	221	216	1	
890822	29	260	SN	2	222	197	1	
890822	25	225	SN	2	225	204	1	
890822	28	238	SN	2	225	238	1	
890822	26	234	SN	2	227	202	1	
890821	20	231	SN	2	228	205	1	
890820	17	232	SN	2	232	245	7	
890822	25	225	SN	2	232	209	1	
890821	19	231	SN	2	234	227	1	
890821	21	229	SN	2	235	226	1	
890822	27	251	SN	2	235	225	7	
890822	30	260	SN	2	235	228	1	
890821	22	243	SN	2	236	259	1	
890821	19	231	SN	2	239	251	1	
890821	22	243	SN	2	240	221	1	
890821	20	231	SN	2	241	243	1	
890822	25	225	SN	2	248	269	1	
890822	30	260	SN	2	250	269	1	
890822	25	225	SN	2	252	269	1	
890822	30	260	SN	2	252	289	1	
890822	30	260	SN	2	252	315	2	
890821	19	231	SN	2	253	258	2	
890822	29	260	SN	2	253	298	7	
890821	21	229	SN	2	254	280	1	
890822	25	225	SN	2	254	305	1	
890822	28	238	SN	2	255	323	7	
890822	28	238	SN	2	255	284	1	
890822	30	260	SN	2	257	308	7	
890820	17	232	SN	2	259	300	7	
890821	22	243	SN	2	259	333	7	
890821	21	229	SN	2	260	276	7	
890821	22	243	SN	2	260	347	7	
890822	29	260	SN	2	260	348	1	
890822	25	225	SN	2	261	230	7	
890822	30	260	SN	2	261	316	1	
890822	25	225	SN	2	262	322	7	
890822	25	225	SN	2	262	306	1	
890822	28	238	SN	2	262	331	7	
890820	17	232	SN	2	263	301	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890821	22	243	SN	2	263	328	7	
890822	30	260	SN	2	263	341	7	
890822	30	260	SN	2	263	370	7	
890821	22	243	SN	2	264	289	1	
890822	28	238	SN	2	265	317	7	
890822	30	260	SN	2	265	366	7	
890821	22	243	SN	2	266	380	7	
890822	25	225	SN	2	266	337	7	
890821	20	231	SN	2	267	327	2	
890821	22	243	SN	2	267	340	7	
890821	22	243	SN	2	267	317	7	
890822	25	225	SN	2	268	352	7	
890821	22	243	SN	2	270	378	7	
890822	26	234	SN	2	270	358	1	
890821	22	243	SN	2	271	353	1	
890822	28	238	SN	2	272	281	7	
890822	30	260	SN	2	273	304	7	
890821	22	243	SN	2	275	362	7	
890820	17	232	SN	2	278	409	7	
890822	30	260	SN	2	278	392	7	
890822	30	260	SN	2	281	430	7	
890820	17	232	SN	2	283	387	7	
890821	22	243	SN	2	284	355	7	
890821	20	231	SN	2	286	466	7	
890822	28	238	SN	2	290	335	7	
890822	29	260	SN	2	292	497	7	
890822	29	260	SN	2	295	503	7	
890822	25	225	SN	2	304	438	7	
890822	25	225	SN	2	308	544	7	
890822	30	260	SN	2	311	543	7	
890821	22	243	SN	2	312	558	7	
890822	28	238	SN	2	314	364	7	
890821	22	243	SN	2	325	629	7	
890821	22	243	SN	2	330	713	7	
890821	19	231	SN	2	339	272	1	
890821	20	231	SN	2	375	895	7	
890820	15	220	GS	0	210	276		
890820	17	232	GS	0	272	201		
890821	19	231	GS	1	208	96	1	
890820	17	232	GS	1	255	223	2	
890820	17	232	GS	1	255	234	2	
890821	20	231	GS	1	261	212	2	
890820	17	232	GS	1	269	264	4	
890817	4	198	GS	1	275	244	7	
890820	18	229	GS	1	279	288	4	
890821	19	231	GS	1	287	285	3	
890822	30	260	GS	1	287	264	3	
890822	26	234	GS	2	247	177	7	
890821	19	231	GS	2	260	212	7	
890820	15	220	GS	2	266	218	6	
890821	21	229	GS	2	270	215	7	
890822	26	234	GS	2	270	251	7	
890821	21	229	GS	2	272	254	7	
890822	27	251	GS	2	277	254	7	
890820	15	220	GS	2	279	246	7	
890817	1	216	GS	2	280	246	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890822	29	260	GS	2	280	274	7	
890817	4	198	GS	2	281	267	7	
890821	20	231	GS	2	281	264	7	
890817	1	216	GS	2	283	296	7	
890820	17	232	GS	2	284	294	7	
890821	19	231	GS	2	284	279	7	
890820	16	220	GS	2	286	302	7	
890820	18	229	GS	2	286	301	7	
890821	19	231	GS	2	286	313	7	
890821	21	229	GS	2	287	284	7	
890821	19	231	GS	2	289	295	7	
890822	26	234	GS	2	289	285	7	
890822	26	234	GS	2	290	290	7	
890817	2	221	GS	2	291	327	7	
890821	22	243	GS	2	291	265	7	
890822	26	234	GS	2	291	272	7	
890820	16	220	GS	2	292	307	7	
890822	28	238	GS	2	293	285	7	
890820	17	232	GS	2	294	296	6	
890821	22	243	GS	2	294	298	7	
890821	19	231	GS	2	295	313	7	
890821	21	229	GS	2	295	280	7	
890821	22	243	GS	2	295	289	7	
890822	25	225	GS	2	295	307	7	
890822	26	234	GS	2	295	289	7	
890822	26	234	GS	2	295	257	7	
890822	27	251	GS	2	295	302	7	
890821	19	231	GS	2	297	319	7	
890821	20	231	GS	2	297	313	7	
890821	19	231	GS	2	298	331	7	
890821	21	229	GS	2	298	318	7	
890817	2	221	GS	2	299	327	7	
890821	19	231	GS	2	300	336	7	
890821	20	231	GS	2	300	318	7	
890822	29	260	GS	2	300	343	7	
890817	2	221	GS	2	302	320	7	
890821	19	231	GS	2	302	354	7	
890821	19	231	GS	2	302	326	7	
890821	20	231	GS	2	302	332	7	
890822	26	234	GS	2	303	359	7	
890817	2	221	GS	2	304	343	7	
890820	15	220	GS	2	304	327	7	
890821	19	231	GS	2	304	315	7	
890820	17	232	GS	2	305	269	7	
890821	19	231	GS	2	307	342	7	
890822	30	260	GS	2	307	352	7	
890820	17	232	GS	2	309	275	6	
890822	25	225	GS	2	309	347	7	
890817	4	198	GS	2	310	333	7	
890820	17	232	GS	2	310	261	6	
890820	17	232	GS	2	310	367	6	
890817	4	198	GS	2	312	347	7	
890821	19	231	GS	2	312	270	7	
890820	17	232	GS	2	314	281	7	
890821	19	231	GS	2	317	377	7	
890822	27	251	GS	2	317	405	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890821	19	231	GS	2	324	389	7	
890822	27	251	GS	2	326	449	7	
890817	4	198	WID	1	407	958	3	18102
890817	4	198	WID	1	411	1082	3	18103
890817	4	198	WID	1	422	1144	3	18101
890817	4	198	YT	1	420	1139	4	18001
890817	1	216	YT	1	452	1284	4	18003
890817	4	198	YT	1	465	1740	4	18002
890817	1	216	YT	1	471	1711	4	18004
890817	3	221	ROSE	1	215	101	1	
890821	22	243	ROSE	1	265	248	3	
890822	28	238	ROSE	1	300	395	3	
890821	23	311	ROSE	2	286	312	7	
890821	19	231	BOC	1	611	2963	3	
890820	15	220	BOC	1	618	2656	4	
890821	21	229	BOC	1	624	2913	4	
890822	28	238	BOC	1	638	3192	4	
890820	16	220	BOC	1	640	3232	4	
890821	22	243	BOC	1	640	3052	4	
890821	21	229	BOC	1	645	3202	3	
890822	27	251	BOC	1	645	3332	4	
890822	27	251	BOC	1	650	3482	4	
890822	28	238	BOC	1	650	3624	4	
890821	20	231	BOC	1	655	3536	4	
890821	20	231	BOC	1	656	3948	4	
890821	22	243	BOC	1	658	3270	4	
890817	2	221	BOC	1	659	3594	4	
890822	25	225	BOC	1	671	3508	4	
890820	17	232	BOC	1	682	3966	4	
890822	25	225	BOC	1	683	3734	4	
890820	18	229	BOC	1	684	4522	4	
890820	18	229	BOC	1	688	4070	4	
890821	19	231	BOC	1	688	3924	4	
890821	22	243	BOC	1	690	3904	4	
890817	1	216	BOC	1	693	3964	4	
890821	20	231	BOC	1	700	4460	4	
890822	25	225	BOC	1	709	4548	4	
890820	15	220	BOC	1	711	3535	4	
890820	17	232	BOC	1	713	4324	4	
890820	18	229	BOC	1	716	2474	4	
890821	21	229	BOC	1	722	4768	4	
890821	21	229	BOC	2	610	2640	1	
890822	29	260	BOC	2	610	2835	7	
890820	15	220	BOC	2	652	3354	7	
890822	26	234	BOC	2	670	3804	7	
890822	29	260	BOC	2	676	4216	7	
890820	15	220	BOC	2	688	3400	7	
890821	21	229	BOC	2	695	3820	7	
890822	29	260	BOC	2	712	4702	7	
890820	18	229	BOC	2	728	5270	7	
890822	26	234	BOC	2	735	5258	7	
890822	26	234	BOC	2	750	5418	7	
890820	17	232	BOC	2	765	5638	7	
890821	19	231	BOC	2	772	5884	7	
890822	29	260	BOC	2	772	6990	7	
890820	18	229	BOC	2	778	6665	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890821	21	229	BOC	2	783	6230	7	
890822	26	234	BOC	2	785	7200	2	
890821	19	231	RS	1	277	272	4	17811
890817	4	221	RS	1	292	300	3	17801
890817	4	221	RS	1	295	340	4	17804
890817	4	221	RS	1	303	344	3	17807
890817	4	221	RS	1	304	350	4	17806
890817	4	221	RS	1	305	341	3	17805
890821	19	231	RS	1	305	357	3	17813
890821	19	231	RS	1	367	630	3	17812
890822	25	225	RS	1	367	653	3	17818
890821	20	231	RS	1	375	752	3	17815
890821	20	231	RS	1	397	836	3	17816
890817	4	221	RS	2	305	370	2	17803
890817	4	221	RS	2	326	454	7	17802
890821	22	243	RS	2	402	900	2	17817
890821	20	231	RS	2	408	909	2	17814
890821	20	231	REE	1	422	1198	3	18232
890821	19	231	REE	1	455	1551	4	18229
890817	1	216	REE	1	461	1543	3	18203
890817	1	216	REE	1	465	1532	4	18202
890821	20	231	REE	1	471	1789	3	18233
890821	24	311	REE	1	498	1983	4	18234
890821	21	229	REE	2	455	1589	7	18230
890817	2	221	REE	2	470	1644	7	18201
890820	18	229	REE	2	472	1659	7	18228
890821	20	231	REE	2	475	1562	7	18231
890822	25	225	SC	1	246	230	3	
890820	17	232	SC	1	247	220	4	
890817	4	198	SC	1	253	236	3	
890817	4	198	SC	1	255	231	3	
890822	29	260	SC	1	255	223	2	
890817	4	198	SC	1	258	237	3	
890821	20	231	SC	1	258	263	2	
890821	19	231	SC	1	260	276	3	
890822	30	260	SC	1	260	282	3	
890821	19	231	SC	1	265	279	4	
890822	28	238	SC	1	265	324	4	
890822	29	260	SC	1	265	256	3	
890822	30	260	SC	1	272	338	3	
890821	21	229	SC	1	276	321	1	
890822	30	260	SC	1	280	346	3	
890821	22	243	SC	1	284	365	4	
890821	22	243	SC	1	357	247	4	
890817	4	198	SC	2	245	183	1	
890821	21	229	SC	2	255	228	1	
890821	21	229	SC	2	262	264	1	
890822	29	260	SC	2	263	249	1	
890821	22	243	SC	2	270	297	1	
890817	4	198	SC	2	273	216	1	
890821	19	231	SC	2	274	287	7	
890821	22	243	SC	2	281	352	7	
890822	28	238	SC	2	284	337	2	
890821	22	243	SC	2	287	388	1	
890822	29	260	SC	2	290	374	7	
890817	4	198	SC	2	291	261	2	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890821	22	243	SC	2	292	348	7	
890821	21	229	SC	2	295	321	1	
890817	1	216	SC	2	298	359	2	
890822	29	260	SC	2	298	428	1	
890821	24	311	SC	2	302	363	7	
890817	1	216	SC	2	305	409	2	
890821	19	231	SC	2	312	503	7	
890822	28	238	SC	2	315	513	7	
890817	3	221	SEB	1	215	101		
890820	15	220	SEB	1	290	305	3	
890822	29	260	LC	2	753	4636	3	7210
890822	26	234	LC	2	832	5890	3	7211
890822	28	238	LC	2	872	9845	3	7207
890822	27	251	LC	2	936	8105	3	7206
890821	22	243	LC	2	955	8835	3	7205
890822	28	238	LC	2	992	10510	3	7208
890822	28	238	LC	2	1045	11580	3	7207
890825	44	210	RE	1	473	1578	2	19603
890823	33	220	RE	2	695	6520	2	18601

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
Untrawlable-Scott Islands								
890819	14	225	POP	1	317	437	3	17650
892818	7	225	POP	1	340	540	3	17636
892818	7	225	POP	1	383	751	3	17635
890819	14	225	POP	1	390	814	4	17646
892818	7	225	POP	1	392	912	4	17634
890824	35	229	POP	1	394	899	4	
890819	13	225	POP	1	406	953	4	17651
890819	14	225	POP	1	413	920	4	17648
890819	12	223	POP	1	422	1037	4	17641
892818	7	225	POP	1	431	1100	4	17633
890819	14	225	POP	2	370	804	2	17649
890825	45	101	POP	2	384	736	2	18753
890825	45	101	POP	2	397	880	2	18754
890825	44	210	POP	2	400	931	7	18756
890819	11	220	POP	2	417	1205	2	17639
890825	45	101	POP	2	429	1054	2	18752
890825	41	227	POP	2	440	1391	2	18755
890819	14	225	POP	2	442	1206	2	17644
890819	12	223	POP	2	445	1338	2	17642
890818	5	207	POP	2	446	1130	7	17638
890819	11	220	POP	2	457	1157	2	17640
890819	14	225	POP	2	458	1192	2	17645
890819	14	225	POP	2	468	1436	2	17643
890818	6	223	POP	2	469	1412	2	17637
890819	14	225	POP	2	521	1066	2	17647
890819	12	223	BAB	1	234	214	1	
890824	36	225	BAB	1	270	274	1	
890824	40	228	BAB	1	271	272	1	
890818	6	223	BAB	1	275	324	1	
890819	11	220	BAB	1	280	385	1	
890823	31	216	BAB	1	284	371	1	
890823	32	218	BAB	1	284	382	1	
890819	11	220	BAB	1	290	440	1	
890819	14	225	BAB	1	294	420	1	
890819	14	225	BAB	1	295	426	1	
890824	38	229	BAB	1	295	371	1	
890818	6	223	BAB	1	302	454	1	
890818	5	207	BAB	1	305	1013	1	
890818	5	207	BAB	1	305	981	1	
890818	5	207	BAB	1	320	1012	1	
890823	32	218	BAB	1	322	563	2	
890819	13	225	BAB	1	335	656	1	
890824	37	223	BAB	1	338	643	1	
890818	5	207	BAB	1	342	1164	1	
890819	11	220	BAB	1	342	724	1	
890818	6	223	BAB	1	345	682	1	
890818	5	207	BAB	1	350	1211	1	
890825	44	210	BAB	1	350	810	3	
890825	44	210	BAB	1	354	734	3	
890825	44	210	BAB	1	354	739	2	
890818	5	207	BAB	1	383	1103	1	
890825	44	210	BAB	1	388	877	3	
890823	33	220	BAB	1	392	1119	3	
890818	5	207	BAB	1	402	1612	1	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890823	33	220	BAB	1	404	1218	3	
890824	35	229	BAB	1	404	1226	3	
890824	36	225	BAB	1	408	1362	3	
890824	37	223	BAB	1	414	1160	7	
890825	42	218	BAB	1	414	1162	7	
890823	33	220	BAB	1	415	1548	7	
890825	41	227	BAB	1	415	1240	3	
890818	5	207	BAB	1	430	1925	4	
890825	41	227	BAB	1	431	1377	3	
890818	9	163	BAB	1	434	1461	4	
890825	42	218	BAB	1	442	1477	7	
890818	10	163	BAB	1	444	1648	4	
890825	44	210	BAB	1	445	1527	3	
890818	6	223	BAB	1	446	1502	3	
890825	44	210	BAB	1	447	1691	4	
890818	9	163	BAB	1	450	1467	3	
890819	14	225	BAB	1	450	1576	4	
890824	40	228	BAB	1	450	1565	4	
890824	35	229	BAB	1	451	1420	7	
890818	10	163	BAB	1	454	1639	4	
890823	33	220	BAB	1	462	1802	4	
890823	31	216	BAB	1	463	1657	7	
890823	33	220	BAB	1	464	1570	4	
890818	5	207	BAB	1	467	2350	4	
890818	10	163	BAB	1	469	1918	4	
890825	44	210	BAB	1	472	1844	3	
890825	42	218	BAB	1	474	2003	4	
890825	42	218	BAB	1	474	1655	3	
890819	14	225	BAB	1	475	1846	4	
890823	33	220	BAB	1	475	1758	4	
890824	36	225	BAB	1	480	1188	3	
890825	42	218	BAB	1	481	1760	4	
890825	44	210	BAB	1	481	1876	4	
890825	44	210	BAB	1	482	1739	3	
890818	7	225	BAB	1	488	2007	4	
890824	35	229	BAB	1	488	1916	4	
890825	42	218	BAB	1	489	2220	4	
890824	35	229	BAB	1	490	2033	3	
890825	41	227	BAB	1	493	2262	4	
890824	35	229	BAB	1	495	2126	3	
890825	44	210	BAB	1	495	2081	4	
890818	5	207	BAB	1	497	2747	4	
890824	35	229	BAB	1	502	2243	3	
890825	41	227	BAB	1	502	2348	4	
890818	9	163	BAB	1	503	2356	4	
890824	35	229	BAB	1	505	2213	4	
890824	36	225	BAB	1	507	2399	3	
890824	37	223	BAB	1	515	2215	7	
890819	11	220	BAB	1	517	2517	4	
890818	6	223	BAB	1	520	2376	4	
890818	10	163	BAB	1	520	2390	4	
890819	13	225	BAB	1	520	2534	4	
890825	44	210	BAB	1	523	1988	7	
890818	10	163	BAB	1	524	2232	4	
890824	36	225	BAB	1	525	2353	4	
890824	38	229	BAB	1	525	2375	4	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890825	44	210	BAB	1	530	2363	4	
890818	10	163	BAB	1	534	2708	4	
890824	35	229	BAB	1	534	2588	4	
890824	38	229	BAB	1	535	2740	4	
890818	5	207	BAB	1	545	2464	3	
890818	5	207	BAB	1	558	3054	4	
890818	5	207	BAB	1	564	2205	4	
890825	42	218	BAB	1	610	1894	3	
890823	34	229	BAB	2	249	246	1	
890818	6	223	BAB	2	258	304	1	
890819	12	223	BAB	2	260	317	1	
890819	14	225	BAB	2	295	437	1	
890819	14	225	BAB	2	315	525	1	
890819	14	225	BAB	2	316	565	1	
890819	12	223	BAB	2	319	546	1	
890819	14	225	BAB	2	321	522	1	
890823	32	218	BAB	2	324	577	1	
890818	5	207	BAB	2	330	1396	1	
890819	14	225	BAB	2	331	641	1	
890818	7	225	BAB	2	333	627	1	
890818	5	207	BAB	2	352	1262	1	
890825	41	227	BAB	2	365	759	1	
890818	7	225	BAB	2	367	898	1	
890819	11	220	BAB	2	368	930	1	
890819	11	220	BAB	2	390	987	1	
890824	36	225	BAB	2	395	1035	7	
890823	31	216	BAB	2	405	1176	1	
890824	38	229	BAB	2	409	1150	2	
890818	10	163	BAB	2	412	1250	7	
890824	35	229	BAB	2	415	1240	2	
890823	31	216	BAB	2	416	1400	1	
890825	44	210	BAB	2	419	1232	1	
890825	44	210	BAB	2	425	2671	7	
890824	37	223	BAB	2	426	1266	1	
890825	41	227	BAB	2	429	1521	7	
890818	6	223	BAB	2	430	1357	1	
890818	5	207	BAB	2	442	1954	7	
890825	42	218	BAB	2	447	1408	2	
890823	31	216	BAB	2	449	1744	1	
890824	38	229	BAB	2	454	1562	2	
890818	9	163	BAB	2	455	1582	7	
890825	42	218	BAB	2	455	1423	7	
890824	35	229	BAB	2	458	1805	7	
890825	41	227	BAB	2	462	1951	7	
890818	10	163	BAB	2	467	1825	7	
890825	42	218	BAB	2	467	1685	2	
890825	44	210	BAB	2	472	1636	7	
890824	35	229	BAB	2	480	1973	2	
890825	44	210	BAB	2	482	2149	7	
890818	6	223	BAB	2	483	1977	1	
890818	10	163	BAB	2	485	2014	7	
890824	35	229	BAB	2	491	2011	7	
890824	38	229	BAB	2	492	2048	7	
890823	32	218	BAB	2	500	2144	2	
890825	42	218	BAB	2	500	2315	7	
890825	44	210	BAB	2	500	2390	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890824	38	229	BAB	2	502	2182	7	
890825	42	218	BAB	2	502	1992	7	
890824	38	229	BAB	2	504	2130	7	
890818	9	163	BAB	2	507	2208	7	
890819	12	223	BAB	2	508	2141	7	
890824	35	229	BAB	2	509	2517	7	
890825	41	227	BAB	2	509	2673	7	
890824	37	223	BAB	2	510	2238	7	
890824	38	229	BAB	2	510	2691	7	
890818	9	163	BAB	2	512	2358	7	
890819	11	220	BAB	2	512	2189	7	
890818	10	163	BAB	2	515	2332	7	
890824	38	229	BAB	2	516	2740	7	
890824	40	228	BAB	2	519	2317	7	
890823	34	229	BAB	2	520	2341	7	
890825	42	218	BAB	2	520	2428	2	
890825	42	218	BAB	2	520	2361	7	
890824	38	229	BAB	2	521	2438	7	
890824	38	229	BAB	2	521	3555	7	
890825	44	210	BAB	2	522	2571	2	
890825	44	210	BAB	2	524	2565	7	
890825	42	218	BAB	2	525	2644	7	
890825	44	210	BAB	2	525	2426	7	
890825	44	210	BAB	2	525	2462	7	
890823	33	220	BAB	2	526	2621	7	
890823	32	218	BAB	2	528	2271	7	
890824	36	225	BAB	2	530	2486	7	
890824	40	228	BAB	2	530	2782	7	
890825	41	227	BAB	2	530	2840	7	
890825	44	210	BAB	2	531	2652	2	
890825	44	210	BAB	2	531	2403	7	
890823	32	218	BAB	2	532	2253	7	
890823	32	218	BAB	2	532	2683	7	
890825	41	227	BAB	2	532	2682	2	
890818	10	163	BAB	2	534	3022	7	
890825	41	227	BAB	2	534	2977	7	
890818	5	207	BAB	2	535	3105	7	
890823	31	216	BAB	2	535	2754	7	
890824	38	229	BAB	2	535	2666	7	
890825	44	210	BAB	2	535	2884	7	
890823	31	216	BAB	2	536	2638	7	
890823	33	220	BAB	2	536	2862	7	
890819	13	225	BAB	2	539	2784	7	
890823	33	220	BAB	2	540	2556	2	
890824	35	229	BAB	2	540	3074	7	
890825	42	218	BAB	2	540	2820	7	
890824	39	228	BAB	2	542	2873	7	
890818	5	207	BAB	2	544	3684	7	
890818	10	163	BAB	2	545	3060	7	
890824	36	225	BAB	2	545	2761	7	
890824	38	229	BAB	2	545	2892	7	
890825	42	218	BAB	2	545	3018	7	
890825	42	218	BAB	2	545	2695	7	
890825	44	210	BAB	2	546	3022	7	
890825	44	210	BAB	2	547	2811	7	
890824	38	229	BAB	2	548	2902	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890824	40	228	BAB	2	548	3078	7	
890824	39	228	BAB	2	549	2902	7	
890818	5	207	BAB	2	550	3260	7	
890818	6	223	BAB	2	550	3066	7	
890825	42	218	BAB	2	550	2969	7	
890825	44	210	BAB	2	550	3068	7	
890825	44	210	BAB	2	550	3184	7	
890824	37	223	BAB	2	552	2582	7	
890819	13	225	BAB	2	555	3500	7	
890825	41	227	BAB	2	555	3166	7	
890823	33	220	BAB	2	556	3098	7	
890824	35	229	BAB	2	558	3028	7	
890818	7	225	BAB	2	560	2819	7	
890819	14	225	BAB	2	560	3096	7	
890823	31	216	BAB	2	560	3302	7	
890824	35	229	BAB	2	561	3098	7	
890819	13	225	BAB	2	562	3288	7	
890818	7	225	BAB	2	563	2830	7	
890825	41	227	BAB	2	563	3210	7	
890823	31	216	BAB	2	564	3272	7	
890818	6	223	BAB	2	565	2891	7	
890823	33	220	BAB	2	565	3842	7	
890825	41	227	BAB	2	566	3016	7	
890825	41	227	BAB	2	575	3014	7	
890825	44	210	BAB	2	575	3584	7	
890819	14	225	BAB	2	578	3594	7	
890825	41	227	BAB	2	578	3378	7	
890824	38	229	BAB	2	580	3512	7	
890824	37	223	BAB	2	581	3656	7	
890823	34	229	BAB	2	582	3826	7	
890818	6	223	BAB	2	587	3490	7	
890818	6	223	BAB	2	587	3980	7	
890818	6	223	BAB	2	589	4640	7	
890818	6	223	BAB	2	590	4208	7	
890819	13	225	BAB	2	590	3606	7	
890825	41	227	BAB	2	594	3676	7	
890824	35	229	BAB	2	595	3700	7	
890825	41	227	BAB	2	596	3604	7	
890819	13	225	BAB	2	597	4606	7	
890818	6	223	BAB	2	600	3806	7	
890824	38	229	BAB	2	602	3820	7	
890819	13	225	BAB	2	606	5324	7	
890825	44	210	BAB	2	607	2410	7	
890818	5	207	BAB	2	610	5588	7	
890818	6	223	BAB	2	612	4380	7	
890818	6	223	BAB	2	613	4804	7	
890818	6	223	BAB	2	620	4280	7	
890818	6	223	BAB	2	625	4238	7	
890823	31	216	BAB	2	629	5892	7	
890818	7	225	BAB	2	630	4910	7	
890823	33	220	BAB	2	634	5274	7	
890818	6	223	BAB	2	645	4076	7	
890824	36	225	BAB	2	651	4972	7	
890819	12	223	SR	1	720	5610	7	
890823	32	218	SR	1	952	15280	4	
890818	10	163	SG		495	1293		

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	10	163	SG	1	471	1512	2	17903
890824	38	229	SG	1	491	1652	7	17926
890824	38	229	SG	1	500	1623	7	17927
890818	9	163	SG	1	520	1981	7	17905
890823	33	220	SG	1	520	1841	7	17923
890819	11	220	SG	1	524	1921	7	17917
890818	9	163	SG	1	526	2124	7	17908
890823	32	218	SG	1	535	2005	7	17922
890819	13	225	SG	1	540	1851	7	17918
890825	41	227	SG	1	542	2174	7	17928
890825	42	218	SG	1	548	2264	7	17931
890818	9	163	SG	1	550	2173	7	17907
890825	44	210	SG	1	557	2309	7	17930
890818	6	223	SG	1	575	2336	7	17912
890825	44	210	SG	1	575	2321	7	17929
890818	5	207	SG	2	472	1433	7	17916
890818	10	163	SG	2	482	1678	1	17904
890818	5	207	SG	2	487	1532	7	17914
890824	36	225	SG	2	511	1766	7	17925
890818	7	225	SG	2	535	2183	7	17909
890823	33	220	SG	2	547	2212	7	17924
890818	9	163	SG	2	564	2362	7	17906
890818	6	223	SG	2	565	2515	7	17911
890818	6	223	SG	2	585	2576	7	17913
890818	5	207	SG	2	590	2786	7	
890823	31	216	SG	2	610	3072	7	17921
890818	6	223	SG	2	622	2791	7	17910
890818	5	207	SG	2	635	3074	7	17915
890823	31	216	SG	2	670	3630	7	17920
890819	11	220	SN	2	223	215	7	
890818	5	207	GS		282			
890823	31	216	GS	1	205	102	1	
890819	12	223	GS	1	244	206	3	
890818	7	225	GS	1	257		3	
890824	37	225	GS	1	258	201	7	
890818	7	225	GS	1	270		7	
890819	12	223	GS	1	272	241	3	
890824	35	229	GS	1	275	281	3	
890819	14	225	GS	1	280	258	3	
890818	7	225	GS	1	301		3	
890819	11	220	GS	2	246	204	7	
890819	11	220	GS	2	252	201	7	
890819	12	223	GS	2	260	245	5	
890823	31	216	GS	2	260	202	7	
890819	14	225	GS	2	268	223	7	
890818	5	207	GS	2	275	249	7	
890819	14	225	GS	2	275	235	7	
890819	14	225	GS	2	276	249	7	
890823	34	229	GS	2	278	284	7	
890819	14	225	GS	2	281	255	7	
890818	5	207	GS	2	282	279	7	
890818	7	225	GS	2	282		7	
890823	32	218	GS	2	283	289	7	
890819	11	220	GS	2	285	288	7	
890819	11	220	GS	2	285	295	7	
890819	14	225	GS	2	285	281	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	7	225	GS	2	286		7	
890818	7	225	GS	2	286		7	
890819	14	225	GS	2	286	266	7	
890819	14	225	GS	2	286	296	7	
890819	14	225	GS	2	286	291	7	
890823	33	220	GS	2	288	296	7	
890818	7	225	GS	2	289		7	
890819	14	225	GS	2	290	319	7	
890819	14	225	GS	2	291	290	7	
890819	11	220	GS	2	292	334	7	
890819	14	225	GS	2	292	316	7	
890819	12	223	GS	2	293	315	7	
890819	11	220	GS	2	294	331	7	
890823	34	229	GS	2	294	293	7	
890819	11	220	GS	2	295	328	7	
890819	11	220	GS	2	295	309	7	
890819	11	220	GS	2	297	336	7	
890818	5	207	GS	2	298	308	7	
890819	14	225	GS	2	298	330	7	
890819	14	225	GS	2	299	291	7	
890818	5	207	GS	2	300	273	2	
890819	11	220	GS	2	300	326	7	
890819	14	225	GS	2	300	328	7	
890824	38	229	GS	2	300	312	2	
890819	11	220	GS	2	302	326	7	
890819	12	223	GS	2	305	336	7	
890823	34	229	GS	2	305	327	7	
890824	37	225	GS	2	306	373	7	
890818	7	225	GS	2	310		7	
890819	14	225	GS	2	311	354	7	
890819	12	223	GS	2	314	350	7	
890819	12	223	GS	2	314	370	7	
890819	14	225	GS	2	315	372	5	
890819	14	225	GS	2	317	370	7	
890823	32	218	GS	2	317	377	7	
890818	10	163	WID	1	442	1510	4	18104
890818	10	163	YT	1	495	1864	4	18005
890824	35	229	ROSE	1	203		1	
890818	9	163	ROSE	1	227	228	7	
890819	13	225	ROSE	1	243	201	3	
890818	10	163	ROSE	1	259	248	7	
890818	10	163	ROSE	1	265	256	7	
890825	44	210	ROSE	1	278	305	3	
890818	10	163	ROSE	1	285	305	7	
890824	36	225	ROSE	1	297	387	7	
890825	41	227	ROSE	2	243	200	7	
890824	38		ROSE	2	245	239	7	
890823	31	216	ROSE	2	250	229	7	
890824	38	229	ROSE	2	255	224	1	
890818	10	163	ROSE	2	257	201	7	
890818	7	225	ROSE	2	267		7	
890823	34	229	ROSE	2	274	319	7	
890825	44	210	ROSE	2	275	325	7	
890818	10	163	ROSE	2	285	308	7	
890818	5	207	BOC	1	586	3178	4	
890824	38	229	BOC	1	608	2649	4	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890823	31	216	BOC	1	612	3038	4	
890819	13	225	BOC	1	623	2961	4	
890824	35	229	BOC	1	627	3036	4	
890819	11	220	BOC	1	628	3648	4	
890823	33	220	BOC	1	634	3144	3	
890818	6	223	BOC	1	636	3170	4	
890818	5	207	BOC	1	637	3444	4	
890825	44	210	BOC	1	638	3106	4	
890818	5	207	BOC	1	640	4048	4	
890823	34	229	BOC	1	640	3286	4	
890825	42	218	BOC	1	640	3780	4	
890818	6	223	BOC	1	645	3172	4	
890824	35	229	BOC	1	645	2364	4	
890824	38	229	BOC	1	645	3400	4	
890818	6	223	BOC	1	646	3332	4	
890818	5	207	BOC	1	648	3850	3	
890818	5	207	BOC	1	650	3622	4	
890819	12	220	BOC	1	650	3394	4	
890824	35	229	BOC	1	650	3342	4	
890825	41	227	BOC	1	651	3176	4	
890818	6	223	BOC	1	655	3750	4	
890824	38	229	BOC	1	655	3430	4	
890823	31	216	BOC	1	656	3478	4	
890824	35	229	BOC	1	656	3502	4	
890818	5	207	BOC	1	657	3844	4	
890823	34	229	BOC	1	657	3334	4	
890818	5	207	BOC	1	660	3854	4	
890824	37	223	BOC	1	660	3360	4	
890825	41	227	BOC	1	660	3576	4	
890823	33	220	BOC	1	665	3968	4	
890824	40	228	BOC	1	665	3620	3	
890823	33	220	BOC	1	672	3468	4	
890819	11	220	BOC	1	674	3852	4	
890818	6	223	BOC	1	675	3902	4	
890818	6	223	BOC	1	675	3848	4	
890818	6	223	BOC	1	677	4010	4	
890818	5	207	BOC	1	680	4498	4	
890818	6	223	BOC	1	680	3706	4	
890825	41	227	BOC	1	683	3958	4	
890825	44	210	BOC	1	684	3976	4	
890824	35	229	BOC	1	687	4286	4	
890824	37	223	BOC	1	690	4424	4	
890825	42	218	BOC	1	695	4058	4	
890825	44	210	BOC	1	695	4576	4	
890819	14	225	BOC	1	697	4918	4	
890823	31	216	BOC	1	697	4268	4	
890818	6	223	BOC	1	706	3842	4	
890824	40	228	BOC	1	722	5356	4	
890819	11	220	BOC	1	723	5088	4	
890823	31	216	BOC	2	635	3156	7	
890818	5	207	BOC	2	640	3890	7	
890819	12	220	BOC	2	642	3216	7	
890818	6	223	BOC	2	648	3540	7	
890819	12	220	BOC	2	662	3440	7	
890825	41	227	BOC	2	665	3818	7	
890818	5	207	BOC	2	670	4206	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	5	207	BOC	2	685	4648	7	
890818	6	223	BOC	2	690	4222	7	
890825	41	227	BOC	2	694	4258	7	
890823	33	220	BOC	2	696	4266	7	
890825	42	218	BOC	2	705	4556	7	
890825	42	218	BOC	2	735	4696	7	
890819	11	220	BOC	2	740	5994	7	
890819	12	220	BOC	2	780	5968	7	
890818	5	207	BOC	2	810	7590	7	
890819	11	220	BOC	2	813	6385	7	
890818	10	163	CAN	0	501		0	
890818	9	163	CAN	0	527	2076		
890818	10	163	CAN	1	492	2239	3	18306
890818	10	163	CAN	1	507	2240	4	18301
890818	10	163	CAN	1	549	3132	4	18303
890818	10	163	CAN	2	485	2071	2	18304
890818	10	163	CAN	2	521	2302	2	18302
890818	10	163	CAN	2	558	3190	2	18305
890818	9	163	RS	1	277	243	3	17809
890818	9	163	RS	1	287	307	3	
890818	10	163	RS	1	290	318	4	17808
890819	11	220	RS	1	305	429	4	
890819	11	220	RS	1	313	434	4	
890819	12	223	RS	1	332	483	4	
890824	36	225	RS	2	339	523	7	17819
890825	44	210	RS	2	404	885	7	17820
890823	33	220	REE		465	1218		18238
890824	36	225	REE	1	370	901	3	18244
890824	40	228	REE	1	395	942	3	18258
890824	40	228	REE	1	435	1203	7	18259
890819	12	223	REE	1	438	1392	4	18220
890818	6	223	REE	1	444	1318	4	18209
890818	5	207	REE	1	445	1441	4	18212
890819	13	225	REE	1	445	1384	4	18227
890823	31	216	REE	1	445	1511	4	18237
890818	6	223	REE	1	449	1383	4	18207
890823	31	216	REE	1	449	1476	4	18235
890818	7	225	REE	1	450	1382	3	18204
890819	13	225	REE	1	450	1595	4	18226
890823	31	216	REE	1	450	1303	4	18236
890824	36	225	REE	1	450	1496	4	18243
890824	36	225	REE	1	450	1352	4	18245
890818	6	223	REE	1	452	1430	4	18210
890818	7	225	REE	1	452	1413	3	18205
890824	35	229	REE	1	455	1502	3	18248
890824	38	229	REE	1	455	1550	2	18255
890825	41	227	REE	1	455	1652	3	18260
890818	5	207	REE	1	457	1368	4	18214
890824	35	229	REE	1	459	1504	4	18251
890818	6	223	REE	1	460	1495	4	
890824	35	229	REE	1	460	1540	4	18252
890819	13	225	REE	1	465	1608	4	18222
890819	13	225	REE	1	466	1522	4	18224
890824	39	228	REE	1	466	1505	3	18246
890819	13	225	REE	1	467	1510	3	18225
890818	5	207	REE	1	475	1690	4	18217

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890823	34	229	REE	1	478	1652	4	18239
890824	38	229	REE	1	480	1784	4	18256
890824	39	228	REE	1	481	1802	3	18247
890825	44	210	REE	1	485	1831	4	18262
890825	44	210	REE	1	491	1720	3	18261
890818	6	223	REE	1	533	1347	4	18211
890824	37	225	REE	2	365	784	2	
890819	14	225	REE	2	393	1023	2	18221
890818	5	207	REE	2	430	1168	3	18213
890818	5	207	REE	2	438	1389	7	18215
890819	13	225	REE	2	440	1409	2	18223
890818	7	225	REE	2	445	1406	3	18206
890818	5	207	REE	2	447	1514	7	18218
890818	6	223	REE	2	447	1336	7	18208
890824	36	225	REE	2	452	1464	2	18240
890818	5	207	REE	2	456	1427	7	18216
890824	36	225	REE	2	460	1607	2	18241
890824	35	229	REE	2	461	1330	2	18253
890819	11	220	REE	2	465	1672	7	18219
890824	35	229	REE	2	467	1684	2	18250
890824	35	229	REE	2	472	1587	2	18249
890824	36	225	REE	2	479	1680	2	18242
890824	35	229	REE	2	494	1974	2	18254
890824	38	229	REE	2	498	2104	2	18257
890823	31	216	YE	1	247	240	1	
890818	5	207	YE	1	557	3108	1	18405
890818	9	163	YE	1	615	4938	7	18401
890818	9	163	YE	1	617	4235	7	18404
890818	9	163	YE	1	650	5850	7	18402
890824	39	228	YE	1	670	5716	7	18406
890818	9	163	YE	2	532	2891	7	18403
890825	42	218	YE	2	620	4820	7	18407
890823	31	216	SC		240			
890824	38	229	SC		241			
890825	41	227	SC		242			
890823	31	216	SC		245			
890825	41	227	SC		245			
890825	42	218	SC		245			
890824	36	225	SC		248			
890824	35	229	SC		250			
890825	42	218	SC		250			
890823	31	216	SC		251			
890824	35	229	SC		251			
890824	36	225	SC		251			
890825	41	227	SC		252			
890824	36	225	SC		254			
890825	41	227	SC		254			
890823	31	216	SC		255			
890824	36	225	SC		255			
890824	36	225	SC		255			
890825	41	227	SC		255			
890824	38	229	SC		256			
890824	38	229	SC		256			
890825	41	227	SC		256			
890823	31	216	SC		257			
890823	31	216	SC		258			

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890823	31	216	SC		258			
890824	35	229	SC		258			
890825	42	218	SC		258			
890824	35	229	SC		259			
890824	35	229	SC		260			
890824	38	229	SC		260			
890823	31	216	SC		261			
890824	35	229	SC		261			
890825	41	227	SC		261			
890825	41	227	SC		261			
890825	41	227	SC		261			
890824	36	225	SC		262			
890824	38	229	SC		263			
890824	36	225	SC		264			
890824	39	228	SC		264			
890825	41	227	SC		264			
890823	31	216	SC		265			
890823	31	216	SC		265			
890823	31	216	SC		265			
890823	31	216	SC		265			
890824	39	228	SC		265			
890823	31	216	SC		267			
890823	31	216	SC		267			
890824	36	225	SC		267			
890825	41	227	SC		267			
890825	42	218	SC		267			
890823	31	216	SC		268			
890824	36	225	SC		268			
890824	36	225	SC		268			
890823	31	216	SC		269			
890823	31	216	SC		269			
890824	36	225	SC		269			
890823	31	216	SC		270			
890823	31	216	SC		270			
890824	35	229	SC		270			
890824	36	225	SC		270			
890823	31	216	SC		271			
890824	36	225	SC		271			
890824	36	225	SC		271			
890824	38	229	SC		271			
890824	36	225	SC		272			
890824	38	229	SC		272			
890824	38	229	SC		272			
890825	42	218	SC		272			
890824	36	225	SC		274			
890823	31	216	SC		276			
890823	31	216	SC		276			
890824	38	229	SC		277			
890825	41	227	SC		277			
890823	31	216	SC		278			
890824	35	229	SC		278			
890824	36	225	SC		278			
890825	41	227	SC		278			
890824	36	225	SC		279			
890824	39	228	SC		280			
890824	36	225	SC		281			

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890824	36	225	SC		281			
890824	36	225	SC		282			
890823	31	216	SC		283			
890823	31	216	SC		284			
890824	36	225	SC		284			
890823	31	216	SC		285			
890824	36	225	SC		285			
890824	36	225	SC		286			
890824	39	228	SC		286			
890823	31	216	SC		287			
890824	36	225	SC		287			
890824	38	229	SC		287			
890824	36	225	SC		288			
890824	38	229	SC		288			
890824	36	225	SC		289			
890825	42	218	SC		289			
890824	36	225	SC		290			
890824	38	229	SC		290			
890824	36	225	SC		291			
890824	39	228	SC		291			
890824	36	225	SC		292			
890824	36	225	SC		292			
890825	41	227	SC		292			
890825	42	218	SC		292			
890824	36	225	SC		293			
890824	38	229	SC		293			
890824	36	225	SC		294			
890823	31	216	SC		295			
890824	35	229	SC		295			
890824	39	228	SC		295			
890824	35	229	SC		296			
890824	36	225	SC		296			
890824	38	229	SC		297			
890824	36	225	SC		298			
890824	38	229	SC		298			
890824	38	229	SC		300			
890825	41	227	SC		300			
890825	42	218	SC		300			
890824	36	225	SC		301			
890824	39	228	SC		301			
890825	42	218	SC		302			
890823	31	216	SC		305			
890824	36	225	SC		305			
890824	39	228	SC		305			
890823	31	216	SC		307			
890824	36	225	SC		308			
890823	31	216	SC		309			
890825	42	218	SC		309			
890824	36	225	SC		310			
890824	36	225	SC		310			
890824	39	228	SC		310			
890824	38	229	SC		311			
890824	39	228	SC		311			
890824	35	229	SC		312			
890824	36	225	SC		312			
890824	36	225	SC		312			

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890824	36	225	SC		313			
890824	35	229	SC		314			
890824	36	225	SC		314			
890823	31	216	SC		315			
890824	36	225	SC		315			
890824	36	225	SC		315			
890824	38	229	SC		315			
890825	42	218	SC		315			
890825	42	218	SC		315			
890823	31	216	SC		316			
890823	31	216	SC		316			
890823	31	216	SC		316			
890825	42	218	SC		316			
890823	31	216	SC		318			
890824	36	225	SC		319			
890824	36	225	SC		319			
890824	39	228	SC		319			
890825	42	218	SC		319			
890824	36	225	SC		320			
890824	38	229	SC		320			
890824	36	225	SC		321			
890824	36	225	SC		324			
890824	35	229	SC		325			
890824	35	229	SC		325			
890824	36	225	SC		327			
890824	39	228	SC		329			
890823	31	216	SC		330			
890825	42	218	SC		330			
890823	31	216	SC		332			
890823	31	216	SC		335			
890824	36	225	SC		335			
890824	38	229	SC		335			
890824	39	228	SC		335			
890825	42	218	SC		335			
890824	35	229	SC		336			
890824	36	225	SC		337			
890824	35	229	SC		338			
890823	31	216	SC		339			
890824	36	225	SC		340			
890824	36	225	SC		340			
890825	42	218	SC		340			
890825	42	218	SC		342			
890824	39	228	SC		344			
890824	39	228	SC		344			
890825	42	218	SC		344			
890824	36	225	SC		346			
890825	41	227	SC		348			
890824	35	229	SC		349			
890824	36	225	SC		350			
890825	42	218	SC		354			
890824	36	225	SC		355			
890824	39	228	SC		357			
890824	39	228	SC		357			
890824	35	229	SC		358			
890824	39	228	SC		362			
890824	39	228	SC		372			

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890824	36	225	SC		381			
890824	35	229	SC		382			
890824	35	229	SC		387			
890818	9	163	SC	0	272	258		
890818	6	223	SC	1	215		3	
890818	6	223	SC	1	218		4	
890818	5	207	SC	1	245		4	
890818	5	207	SC	1	245		4	
890818	5	207	SC	1	246		7	
890818	6	223	SC	1	250		3	
890818	7	225	SC	1	251		3	
890818	6	223	SC	1	255		3	
890819	11	220	SC	1	255		3	
890819	11	220	SC	1	255		3	
890818	6	223	SC	1	256		3	
890819	14	225	SC	1	256	257	3	
890818	6	223	SC	1	257		3	
890818	6	223	SC	1	257		3	
890819	13	225	SC	1	259	239	7	
890818	5	207	SC	1	260		4	
890818	5	207	SC	1	260		4	
890818	6	223	SC	1	260		3	
890818	6	223	SC	1	260		3	
890818	6	223	SC	1	260		3	
890818	6	223	SC	1	260		4	
890818	6	223	SC	1	260		4	
890818	6	223	SC	1	260		3	
890818	6	223	SC	1	260		3	
890819	11	220	SC	1	260		4	
890818	6	223	SC	1	261		3	
890818	6	223	SC	1	261		3	
890819	13	225	SC	1	261	296	4	
890819	13	225	SC	1	261	287	4	
890818	7	225	SC	1	262		3	
890819	11	220	SC	1	262		3	
890819	11	220	SC	1	263		4	
890819	12	223	SC	1	263		4	
890819	14	225	SC	1	263	244	4	
890818	5	207	SC	1	264		4	
890819	14	225	SC	1	264	242	3	
890818	5	207	SC	1	265		4	
890819	11	220	SC	1	265		3	
890819	12	223	SC	1	265		4	
890818	5	207	SC	1	266		4	
890818	5	207	SC	1	266		4	
890818	7	225	SC	1	266		4	
890818	5	207	SC	1	267		4	
890818	7	225	SC	1	267		3	
890818	5	207	SC	1	269		4	
890818	7	225	SC	1	269		3	
890818	7	225	SC	1	269		4	
890818	5	207	SC	1	270		4	
890818	5	207	SC	1	270		4	
890818	6	223	SC	1	270		3	
890818	7	225	SC	1	270		4	
890818	7	225	SC	1	270		4	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890819	11	220	SC	1	270		7	
890818	5	207	SC	1	271		4	
890818	7	225	SC	1	271		3	
890818	6	223	SC	1	272		3	
890818	7	225	SC	1	273		3	
890818	5	207	SC	1	274		4	
890818	5	207	SC	1	275		4	
890818	5	207	SC	1	275		4	
890818	6	223	SC	1	275		4	
890818	6	223	SC	1	275		4	
890818	6	223	SC	1	275		4	
890818	6	223	SC	1	275		3	
890818	7	225	SC	1	275		3	
890818	7	225	SC	1	275		3	
890818	7	225	SC	1	275		3	
890819	11	220	SC	1	275		4	
890819	11	220	SC	1	275		4	
890819	11	220	SC	1	275		4	
890819	13	225	SC	1	275	321	4	
890819	13	225	SC	1	275	279	3	
890818	5	207	SC	1	276		4	
890818	5	207	SC	1	276		4	
890818	6	223	SC	1	276		3	
890818	6	223	SC	1	276		3	
890818	6	223	SC	1	277		3	
890818	7	225	SC	1	277		3	
890818	7	225	SC	1	277		4	
890818	5	207	SC	1	278		4	
890818	6	223	SC	1	278		4	
890818	5	207	SC	1	280		4	
890818	6	223	SC	1	280		4	
890818	6	223	SC	1	280		4	
890818	6	223	SC	1	280		4	
890818	6	223	SC	1	280		4	
890818	7	225	SC	1	280		4	
890818	7	225	SC	1	280		4	
890818	7	225	SC	1	280		3	
890819	13	225	SC	1	280	326	4	
890818	5	207	SC	1	281		4	
890818	6	223	SC	1	282		0	
890818	7	225	SC	1	282		4	
890818	7	225	SC	1	282		4	
890818	7	225	SC	1	282		4	
890819	12	223	SC	1	282		4	
890819	13	225	SC	1	282	323	4	
890818	7	225	SC	1	283		4	
890818	7	225	SC	1	283		4	
890818	7	225	SC	1	283		4	
890818	7	225	SC	1	284		4	
890818	5	207	SC	1	285		4	
890818	6	223	SC	1	285		4	
890818	6	223	SC	1	285		4	
890818	6	223	SC	1	285		4	
890818	6	223	SC	1	285		4	
890818	6	223	SC	1	285		3	
890818	7	225	SC	1	285		3	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890819	11	220	SC	1	285		4	
890819	11	220	SC	1	285		3	
890819	13	225	SC	1	285	341	4	
890818	5	207	SC	1	286		4	
890818	6	223	SC	1	286		4	
890818	7	225	SC	1	286		4	
890818	7	225	SC	1	287		4	
890819	14	225	SC	1	287	353	4	
890818	6	223	SC	1	288		4	
890818	5	207	SC	1	289		4	
890818	6	223	SC	1	290		4	
890818	6	223	SC	1	290		4	
890818	6	223	SC	1	290		4	
890818	6	223	SC	1	290		3	
890818	7	225	SC	1	290		4	
890818	6	223	SC	1	291		3	
890819	13	225	SC	1	291	355	4	
890818	6	223	SC	1	292		4	
890818	7	225	SC	1	292		4	
890819	11	220	SC	1	292		4	
890819	13	225	SC	1	292	369	4	
890818	6	223	SC	1	293		4	
890818	6	223	SC	1	294		4	
890818	7	225	SC	1	294		3	
890818	6	223	SC	1	295		4	
890818	6	223	SC	1	295		4	
890818	7	225	SC	1	295		3	
890819	14	225	SC	1	295	396	4	
890818	6	223	SC	1	296		4	
890818	6	223	SC	1	296		3	
890818	7	225	SC	1	300		4	
890819	13	225	SC	1	300	364	4	
890818	5	207	SC	1	302		4	
890818	6	223	SC	1	302		3	
890818	6	223	SC	1	302		1	
890818	7	225	SC	1	304		4	
890819	13	225	SC	1	304	376	4	
890818	5	207	SC	1	305		4	
890818	6	223	SC	1	305		4	
890818	6	223	SC	1	307		4	
890818	6	223	SC	1	309		4	
890818	6	223	SC	1	313		4	
890818	5	207	SC	1	316		4	
890818	7	225	SC	1	367		4	
890818	6	223	SC	2	215		7	
890818	6	223	SC	2	219		7	
890818	6	223	SC	2	238		7	
890818	6	223	SC	2	241		7	
890819	13	225	SC	2	255	208	1	
890819	14	225	SC	2	261	243	1	
890818	5	207	SC	2	262		1	
890819	11	220	SC	2	262		7	
890819	12	223	SC	2	262		1	
890818	6	223	SC	2	263		3	
890819	13	225	SC	2	263	246	1	
890818	5	207	SC	2	265		7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	6	223	SC	2	265		1	
890818	6	223	SC	2	267		1	
890818	6	223	SC	2	270		7	
890818	10	163	SC	2	270	234	7	
890818	5	207	SC	2	271		4	
890818	6	223	SC	2	273		7	
890818	5	207	SC	2	275		7	
890818	6	223	SC	2	275		4	
890818	6	223	SC	2	275		7	
890818	6	223	SC	2	275		1	
890818	6	223	SC	2	275		2	
890818	6	223	SC	2	278		1	
890818	7	225	SC	2	278		7	
890818	7	225	SC	2	283		3	
890818	6	223	SC	2	285		7	
890818	6	223	SC	2	286		7	
890819	13	225	SC	2	286	348	7	
890818	5	207	SC	2	288		7	
890819	11	220	SC	2	288		7	
890818	6	223	SC	2	290		7	
890818	6	223	SC	2	290		7	
890819	13	225	SC	2	290	374	7	
890818	5	207	SC	2	291		7	
890818	5	207	SC	2	291		7	
890818	6	223	SC	2	291		2	
890819	12	223	SC	2	291		7	
890818	6	223	SC	2	292		7	
890818	6	223	SC	2	293		7	
890818	6	223	SC	2	293		2	
890818	5	207	SC	2	294		7	
890818	6	223	SC	2	295		7	
890818	6	223	SC	2	295		7	
890818	6	223	SC	2	295		7	
890818	6	223	SC	2	295		7	
890818	6	223	SC	2	295		7	
890819	11	220	SC	2	295		7	
890818	6	223	SC	2	296		7	
890818	6	223	SC	2	296		7	
890818	7	225	SC	2	296		7	
890818	6	223	SC	2	297		7	
890818	6	223	SC	2	298		7	
890819	13	225	SC	2	299	453	4	
890818	6	223	SC	2	300		7	
890819	13	225	SC	2	300	383	7	
890819	13	225	SC	2	300	375	7	
890819	13	225	SC	2	300	409	7	
890818	6	223	SC	2	302		7	
890818	6	223	SC	2	302		7	
890818	6	223	SC	2	302		7	
890818	6	223	SC	2	302		7	
890818	6	223	SC	2	302		7	
890818	6	223	SC	2	302		7	
890819	13	225	SC	2	302	414	7	
890819	13	225	SC	2	302	411	7	
890819	13	225	SC	2	302	380	2	
890819	11	220	SC	2	303		7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890819	13	225	SC	2	303	425	7	
890819	14	225	SC	2	303	382	1	
890818	6	223	SC	2	304		7	
890819	13	225	SC	2	304	473	7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	6	223	SC	2	305		7	
890818	7	225	SC	2	305		7	
890819	11	220	SC	2	305		7	
890818	5	207	SC	2	306		7	
890818	6	223	SC	2	306		2	
890819	13	225	SC	2	306	415	7	
890818	5	207	SC	2	307		7	
890818	6	223	SC	2	307		7	
890819	11	220	SC	2	307		7	
890818	6	223	SC	2	308		7	
890818	6	223	SC	2	308		7	
890818	6	223	SC	2	309		7	
890818	6	223	SC	2	310		7	
890818	6	223	SC	2	310		7	
890818	6	223	SC	2	310		2	
890818	6	223	SC	2	310		7	
890818	6	223	SC	2	310		7	
890818	6	223	SC	2	310		7	
890819	11	220	SC	2	310		7	
890819	13	225	SC	2	311	499	7	
890818	6	223	SC	2	312		7	
890818	6	223	SC	2	312		7	
890818	6	223	SC	2	312		7	
890819	13	225	SC	2	312	421	7	
890819	13	225	SC	2	312	455	7	
890819	13	225	SC	2	312	475	7	
890818	6	223	SC	2	313		7	
890818	6	223	SC	2	313		7	
890818	6	223	SC	2	313		7	
890818	6	223	SC	2	313		7	
890818	7	225	SC	2	313		7	
890818	5	207	SC	2	314		7	
890818	6	223	SC	2	314		7	
890818	7	225	SC	2	314		7	
890819	13	225	SC	2	314	422	7	
890819	14	225	SC	2	314	440	7	
890818	6	223	SC	2	315		7	
890818	6	223	SC	2	315		7	
890818	6	223	SC	2	315		7	
890818	6	223	SC	2	315		7	
890818	6	223	SC	2	315		7	
890818	6	223	SC	2	315		7	
890818	6	223	SC	2	315		7	
890819	11	220	SC	2	315		7	
890819	13	225	SC	2	315	483	7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	6	223	SC	2	316		7	
890818	6	223	SC	2	316		7	
890818	6	223	SC	2	317		7	
890818	6	223	SC	2	317		7	
890818	9	163	SC	2	317	454	7	
890819	13	225	SC	2	317	470	7	
890818	6	223	SC	2	318		7	
890818	6	223	SC	2	318		7	
890818	6	223	SC	2	318		7	
890818	6	223	SC	2	318		7	
890818	6	223	SC	2	318		7	
890818	6	223	SC	2	318		7	
890819	13	225	SC	2	318	485	7	
890818	6	223	SC	2	319		7	
890818	6	223	SC	2	320		7	
890818	6	223	SC	2	320		7	
890818	6	223	SC	2	320		7	
890818	6	223	SC	2	320		7	
890818	6	223	SC	2	320		7	
890818	6	223	SC	2	320		7	
890818	6	223	SC	2	320		7	
890818	7	225	SC	2	320		7	
890819	11	220	SC	2	320		7	
890819	13	225	SC	2	320	482	7	
890819	14	225	SC	2	320	487	2	
890819	14	225	SC	2	320	473	7	
890818	6	223	SC	2	321		7	
890818	6	223	SC	2	321		7	
890819	13	225	SC	2	321	486	7	
890818	6	223	SC	2	322		7	
890818	6	223	SC	2	322		7	
890818	6	223	SC	2	322		7	
890818	6	223	SC	2	322		7	
890819	11	220	SC	2	323		7	
890818	6	223	SC	2	324		7	
890819	13	225	SC	2	324	508	7	
890818	6	223	SC	2	325		7	
890818	6	223	SC	2	325		7	
890818	6	223	SC	2	325		7	
890818	6	223	SC	2	325		7	
890818	6	223	SC	2	325		7	
890818	6	223	SC	2	325		7	
890818	6	223	SC	2	325		7	
890818	7	225	SC	2	325		7	
890819	11	220	SC	2	325		7	
890818	5	207	SC	2	326		7	
890818	6	223	SC	2	326		7	
890818	6	223	SC	2	326		7	
890818	6	223	SC	2	327		7	
890818	6	223	SC	2	327		7	
890818	6	223	SC	2	327		7	
890818	7	225	SC	2	327		7	
890819	13	225	SC	2	327	500	7	
890818	6	223	SC	2	328		7	
890818	6	223	SC	2	330		7	
890818	6	223	SC	2	330		7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	6	223	SC	2	330		7	
890818	6	223	SC	2	330		7	
890818	7	225	SC	2	330		7	
890819	13	225	SC	2	330	501	7	
890818	6	223	SC	2	331		7	
890818	6	223	SC	2	332		7	
890818	6	223	SC	2	332		7	
890818	6	223	SC	2	332		7	
890819	14	225	SC	2	332	553	7	
890818	6	223	SC	2	333		7	
890818	6	223	SC	2	333		7	
890819	13	225	SC	2	333	507	7	
890818	6	223	SC	2	334		7	
890819	14	225	SC	2	334	562	7	
890819	14	225	SC	2	334	524	7	
890818	6	223	SC	2	335		7	
890818	6	223	SC	2	335		7	
890818	6	223	SC	2	335		7	
890819	13	225	SC	2	335	559	7	
890818	6	223	SC	2	336		7	
890819	14	225	SC	2	336	604	7	
890818	6	223	SC	2	337		7	
890818	6	223	SC	2	337		7	
890818	6	223	SC	2	337		7	
890818	6	223	SC	2	338		7	
890818	6	223	SC	2	338		7	
890818	7	225	SC	2	338		7	
890818	7	225	SC	2	338		7	
890818	7	225	SC	2	338		7	
890818	7	225	SC	2	339		7	
890818	6	223	SC	2	340		7	
890818	6	223	SC	2	340		7	
890818	6	223	SC	2	340		7	
890818	6	223	SC	2	340		7	
890818	6	223	SC	2	340		2	
890818	6	223	SC	2	341		7	
890818	6	223	SC	2	341		7	
890818	6	223	SC	2	341		7	
890818	6	223	SC	2	342		7	
890818	6	223	SC	2	342		7	
890818	6	223	SC	2	342		7	
890818	7	225	SC	2	342		7	
890818	7	225	SC	2	342		7	
890818	6	223	SC	2	343		7	
890818	6	223	SC	2	344		7	
890819	11	220	SC	2	344		7	
890818	6	223	SC	2	345		7	
890818	6	223	SC	2	345		7	
890818	6	223	SC	2	345		7	
890818	6	223	SC	2	345		7	
890818	6	223	SC	2	345		7	
890818	6	223	SC	2	345		7	
890818	6	223	SC	2	345		7	
890819	13	225	SC	2	345	602	7	
890818	6	223	SC	2	346		7	

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890818	6	223	SC	2	346		7	
890818	6	223	SC	2	346		7	
890818	6	223	SC	2	346		7	
890819	13	225	SC	2	346	605	7	
890819	13	225	SC	2	346	615	7	
890819	13	225	SC	2	346	589	7	
890819	14	225	SC	2	346	665	7	
890818	6	223	SC	2	347		7	
890818	6	223	SC	2	347		7	
890819	13	225	SC	2	347	692	7	
890818	6	223	SC	2	348		7	
890819	11	220	SC	2	348		7	
890819	12	223	SC	2	348		7	
890819	12	223	SC	2	349		7	
890818	6	223	SC	2	350		7	
890818	6	223	SC	2	350		7	
890819	14	225	SC	2	351	680	7	
890819	14	225	SC	2	351	635	7	
890818	6	223	SC	2	352		7	
890818	6	223	SC	2	352		7	
890818	6	223	SC	2	352		7	
890818	7	225	SC	2	352		7	
890819	13	225	SC	2	352	617	7	
890818	6	223	SC	2	355		7	
890818	7	225	SC	2	355		7	
890819	11	220	SC	2	355		7	
890819	12	223	SC	2	355		7	
890819	13	225	SC	2	355	689	7	
890818	7	225	SC	2	357		7	
890819	11	220	SC	2	357		7	
890818	6	223	SC	2	358		7	
890819	13	225	SC	2	358	681	7	
890819	12	223	SC	2	359		7	
890819	14	225	SC	2	359	737	7	
890818	6	223	SC	2	365		7	
890818	6	223	SC	2	365		7	
890818	7	225	SC	2	367		7	
890818	6	223	SC	2	368		2	
890818	6	223	SC	2	368		7	
890818	7	225	SC	2	374		7	
890819	13	225	SC	2	397	356	7	
890818	6	223	SC	2	418		7	
890819	14	225	SEB	1	266	215	1	
890818	9	163	LC		800			
890818	6	223	LC	2	750	3440	3	7204
890824	39	228	LC	2	750			
890824	39	228	LC	2	750			
890823	31	216	LC	2	782	4504	3	7212
890818	10	163	LC	2	821	5192	3	7201
890818	10	163	LC	2	860	6435	3	7202
890824	38	229	LC	2	878	7825	3	7217
890824	38	229	LC	2	898	7950	3	7218
890824	38	229	LC	2	900			
890825	44	210	LC	2	913	7265	3	7224
890824	37	225	LC	2	927	8674	3	7215
890824	38	229	LC	2	950	7425	3	7219

Appendix Table 6 (cont'd)

Date	Set No.	Depth (m)	Species	Sex[a]	Length (mm)	Weight (gm)	Maturity	Fish No.
890825	41	227	LC	2	995	9695	3	7221
890825	41	227	LC	2	996	9185	3	7222
890825	42	218	LC	2	1000	11010	3	7226
890824	36	225	LC	2	1010	9835	3	7214
890825	41	227	LC	2	1010	9975	3	7223
890825	42	218	LC	2	1010			
890823	34	229	LC	2	1020	12285	3	7213
890825	44	210	LC	2	1075	11450	3	7225
890818	10	163	LC	2	1080	12035	3	7203
890824	37	225	LC	2	1085	12854	3	7216
890824	38	229	LC	2	1110	13500	3	7220
890824	36	225	LC	2	1150			

Totals Sets=43 Fish=2244 (435 S. zacentrus not measured) Lengths=1808
Weights=1235 Age structures=413

[a]0=unknown, 1=male, 2=female